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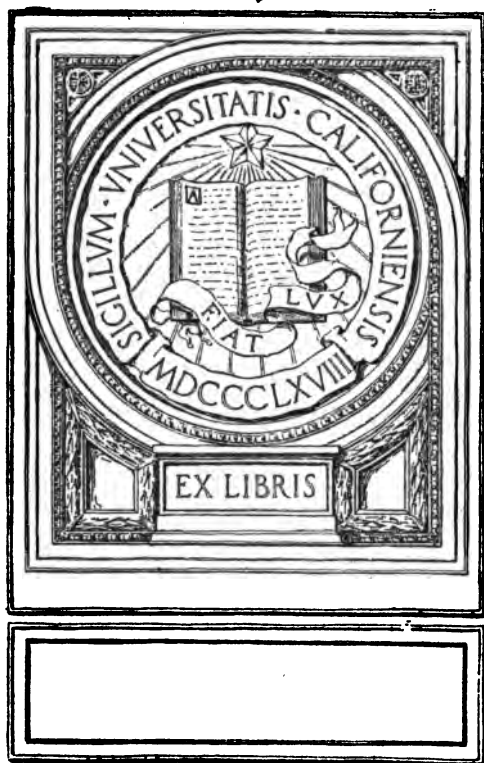
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EXPLANATORY NOTE

The subject of vocational education is so broad and the material is so widely scattered that this attempt has been made to represent in one volume the leading points of view in the discussion. Both vocational education in general and the teaching in the public schools of industrial, commercial and household art subjects, have been covered.

This source book may be helpful to teachers of vocational education and students who are training to be public school teachers, as well as people who have only a general intelligent interest in education, by outlining the subject as a whole and by directing, through its bibliography, the development of investigation in any of the various phases of the subject. No attempt has been made to duplicate the material in the excellent volume compiled by Meyer Bloomfield on vocational guidance.

The practical examples were chosen in the hope that they might stimulate other educators to further effort in solving the problems of education for all the members of their communities.

E. R.

April, 10, 1917.

369845



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SELECTED ARTICLES ON VOCATIONAL EDUCATION

INTRODUCTION

Vocational education was first confined to the learned professions. A recognition of the benefits derived by society in general from the calling of the theologian, doctor, lawyer and the philosopher or teacher, resulted quite naturally in the spending of public funds for education along these lines. When public elementary and high schools were established they prepared students for the higher professional schools or emphasized clerical accomplishments.

Special education for business was begun somewhat more than fifty years ago, at first in private business schools and colleges, later though less successfully by the teaching of commercial subjects in the public schools. Dissatisfaction with the results obtained led, toward the end of the last century, to the establishment of commercial high schools which were more nearly in accordance with the present day demand for vocational commercial education.

Agricultural education is now given in the public schools and separate agricultural high schools have been established in a number of states. The passage of the Morrill Act of 1862 resulted in a large fund of scientific agricultural knowledge, much of which is available as a basis for subject material in public school agricultural courses.

Sewing was added to the public school curriculum at an early date, both for recreation and as an accomplishment. Little else was taught in the household arts before 1870. The National society of sewing schools disbanded in 1901, having accomplished its object, i.e., the addition of the domestic arts to the public school curriculum.

These are some of the beginnings in vocational education in

the public schools. Unfortunately they benefited the small proportion of students only who were able to remain in school past the minimum age for employment. It is now realized that the mass of pupils leave school at an early age and do not find any later means of self-development.

Many pupils who stopped school as a matter of course before they were through the elementary schools were of racial stock which had not been accustomed to "book-learning." Many of them were not successful in the type of work which the school required. In the narrow round of deadening activities which the worker blindly performs at the behest of some one else there is none of the satisfaction which the professional man has, and the youth who has gained only part of the education which the state thinks necessary for an intelligent and useful citizen of a democracy, loses the little knowledge that he had.

Because the avenues of happy and useful living are now almost closed to these workers training in industries and trades is being offered in the public schools. The worker is given a chance to see his work in perspective, is not confined in his knowledge to the one minute operation to which the modern machine often condemns him, and often, because of the training in actual bread-winning, can be kept in school past the economically wasted years from 14 to 16 without getting away from the very life which he will eventually live.

Vocational surveys have been recognized as necessary to give full knowledge of the instruction which will be of most practical benefit to the children of the community. Labor, trade and business organizations have helped to gather this knowledge and have given much practical advice where surveys have been made.

Vocational guidance, which has resulted from the awakened conscience of the community in regard to the welfare of its youth, gives the child at least a little choice in occupation even tho he may have to begin work before he has completed his rudimentary education, and the few hours of continuation school which he may get will do much toward retaining the education already gained and toward seizing the opportunity to learn more and to be employed in better work. The motor-minded boy who stays in school or goes to continuation school has a chance to learn a skilled trade instead of having to take the first avenue open to him with the chance of finding himself in some "dead-end" occupation after he is too old to learn a trade easily. Eli

Weaver in New York City and Frank Parsons in Boston were two men who made early attempts to secure systematic information for the guidance of youth in obtaining entrance into industry.

For the last ten years there has been active discussion and promotion of vocational and especially industrial education in the public schools. The bill introduced by Senator Page was widely discussed but failed to pass each time it came up. The Smith-Hughes bill for the promotion of vocational education passed in the last session of Congress and many states whose legislatures were in session will take advantage of the terms which were intended to promote the training of teachers in vocational subjects.

April 10, 1917.

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EMILY ROBISON.

PHASES OF VOCATIONAL EDUCATION FOR YOUTH

CULTURAL AND VOCATIONAL EDUCATION¹

The situation confronting us to-day in the field of education and life is one calling first for reflection and then for action. Vocational education is too commonly regarded as aiming at industrial success instead of industrial intelligence, and it is too commonly pursued without adequate scrutiny of its relation to other forms of education and to complete living.

But what is complete living? And in what relation to it and to each other do cultural and vocational education stand?

In his famous essay, with the grammatically dubious title: "What Knowledge Is of Most Worth?" Mr. Herbert Spencer says in a familiar passage:

To fit us for complete living is the function which education has to discharge.

This is a good statement on its formal side; as such it can be accepted, without accepting, however, the limited content assigned by Spencer to "complete living," and without accepting the scale of values he attaches to its component parts. Let us see.

According to Spencer, the "activities" of the complete life are (1) direct self-preservation, which is instinctive; (2) indirect self-preservation, by means of vocation; (3) the family; (4) the state; (5) *belles lettres*, for the leisure part of life. This list was arranged by Spencer in order of decreasing importance, for the reason that these activities seem to make each other successively possible in this order.

Now this list of the activities of complete living is interesting because of both what it omits and what values it exemplifies. Contemplation is omitted, though Spencer himself was a phil-

¹ By H. H. Horne. *School and Society*. 3:300-4. February 26, 1916.

nects one with the there and the then. Vocation is pragmatic, culture is idealistic. Vocation is narrow utility, culture is not inutility but broad utility. Vocation is primitive, oriental and Roman; culture is Hellenic and Renaissance. Vocation is a son of Martha, culture a son of Mary. Vocation is the naturalism of Rousseau, culture is the humanism of Fichte. Vocation is man toiling, culture is man thinking and creating. In short, vocation bakes bread, while culture makes it worth while that bread should be baked.

Now a contrast really reveals the deeper unity of the two things contrasted. We can set vocation and culture over against each other because they each belong to complete living. Nietzsche said truly, "Man is the valuing animal." It is doubtless culture that gives value to vocation, but it is also true that vocation makes culture possible. Without vocation, no survival of culture; without culture, but little value in vocation. Ruskin says:

Life without industry is guilt, and industry without art is brutality.

Just so, culture without vocation is like Nero fiddling while Rome burns, while vocation without culture is like the peasants laboring when there's no Angelus to ring. The cultural man without a vocation is a social parasite, while the natural man without culture is a slave to his own nature. Thus these two opposite interests, culture and vocation, are really one in the service of true living.

The fruits of Greek culture grew out of the soil of human slavery. But the movement of democracy has freed the slave from work and freed the master from play. Both master and slave require both culture and vocation for the fully human life. Democracy tends to remove the barriers between the cultured aristocracy and the laboring masses. We no longer regard work as menial, and the idle rich suffer social disesteem. In his oration on "The American Scholar," Emerson says:

There is virtue yet in the hoe and the spade, for learned as well as for unlearned hands.

~~X~~ Culture and vocation are opposites, but not contradictories; on the contrary, both are true, and render each other mutual aid

and comfort. A man's work provides motive for maintaining his health, occupies and more or less cultivates his mind, develops his character and brings him possibly into the sense of kinship with the creative God in whom his religion probably teaches him to believe. A man's culture, on the other hand, enables him to enjoy his work, understand its place and service in society, and use it as a mode of self-expression.

We conclude, then, on the relation of culture and vocation, that they are, or should be, different aspects of the one process of complete living, and that one and the same individual requires both to realize his selfhood. Thinking and doing are not two things, but one thing. Wundt and Royce have shown us this truth in psychology. A cultivated and skilled democracy should show us its truth in society. Complete living, individually and socially, is a complex unity, and to live completely is, of course, man's most difficult art.

How then shall we adjust the claims of cultural and vocational education? In the light of the foregoing, the theoretical solution is not difficult; its practical accomplishment is the difficult thing. The education that fits us for complete living, nay, that exemplifies complete living while we are being educated is both cultural and vocational. Our education shall help us to make a living, it shall also help us to make a life. Education is to acquaint us with the tools and content of culture, making us appreciative, and, in a measure, productive, participants therein; and also to develop our skill in accord with our talent, making us profitable servants of society. Cultural education increases cubical living, vocational education increases social service, whose marketable value is but a means to an end. We are to be made men first, then workmen; we are to be humanized, then vocationalized. Of all vocations, that of the soldier alone makes war on culture and can not be humanized.

Now parenthood can be vocationalized, but not infancy, for the infant's productive skill is not yet available. Even adolescence can be vocationalized in a measure, but not childhood, for the child's talents are not yet known, and can not be till adolescence brings them out. In an ideal arrangement we should have cultural education until at least the natural talents are revealed, that is, through the period of secondary education, after which education should be vocational. Before this time education can not be profitably vocational, for no expert in the

field of vocational guidance can tell what a child can or should do as an adult.

But once again, as Cleveland might remind us, it is a condition, not a theory, that confronts us. Five states in the union still have no compulsory education laws whatever. Those states having such laws usually set fourteen instead of eighteen as the upper age limit. Boys and girls leaving school at this age under some actual or fancied necessity find no employment under existing factory laws or poor employment, neither developing nor promotive. Such conditions, it is to be hoped, will gradually pass. Only as a temporary concession to such conditions is there justification for vocational training for early adolescence and pre-vocational schools for later childhood. Such work as at present organized is half against nature, being premature, and half against reason, allowing inadequate time for the assumption of culture, the right in a democracy of every member of society.

But the cultural curriculum of lower and secondary schools should recognize vocation as one of the essential elements in civilization, as it has not hitherto done. Such recognition involves learning by doing as a method, and a study of the occupations of man as content. History particularly should include the record of human achievement in times of peace. Such education, though not utilizing the vocational motive, would promote vocational intelligence. And it is more intelligence, not more "efficiency," that the workers of the world need.

A vocational college, half culture and half vocation, is nothing against nature; it may also be nothing against reason, if the preceding years have been wisely utilized in laying the broad foundations of culture.

n.B. A professional institution building vocational skill on collegiate culture has the best warrant, from both nature and reason, for its existence.

n.B. In sum, mankind requires a vocational education that is cultural at the bottom and a cultural education that is vocational at the top. We need agricultural, industrial, commercial and professional intelligence, and we need healthful, scientific, esthetic, moral and spiritual skill. We want neither dumb toilers nor exclusive culturists. Culture shall drop down from heaven, and vocation shall spring up from the earth. Vocation shall be the application of culture, and culture shall be the halo of vocation.

In his poem entitled: "A Grammarian's Funeral shortly after the Revival of Learning in Europe," Browning says:

Oh, if we draw a circle premature,
Heedless of far gain,
Greedy for quick returns of profit, sure
Bad is our bargain!

THE RELIANCE OF DEMOCRACY¹

Time was, in the history of nations, when one individual was set over against another as of more worth, as being more noble, and hence more powerful. It was not a question of attaining this greater nobility or worthiness but merely a question of being born with a so-called finer and better strain of blood in one's veins.

But in a democracy this cannot be. The question which every man must answer in a republic is not, "Who was your father?" but is rather "What can you do? Will you do it?" No longer can a man live on the deeds of his ancestors. To have had good, and true ancestors, as well, is a mighty asset; but to be good, and true, and noble, one's own self without regard to one's forefathers, is of infinitely greater value in a democracy.

It cannot, of course, be disputed that in reality we are not all born with equal capacities and endowments. But the ancestry alone cannot determine what we may become. As Will Carleton has put it—"Some men are born for great things, and some are born for small; with some it is not recorded why they were born at all." There may be an aristocracy and a middle class; there may be a noble and a peasant; but aristocracy and nobility find their places no less in the lowly cabin and squalid tenement, than in the stately mansion or palatial hall.

How may a democracy develop and preserve such great figures in her national life? How can the spirit of democracy, of equality, of justice for all be preserved? How shall just laws be framed, interpreted and enforced if the rank and file, the rabble, the "hoi polloi," are to be allowed a voice in government? How shall democracy survive, what shall be her reliance?

Those great and fundamental principles upon which democracy and the republican form of government rest are in them-

¹By L. A. Williams. Educational Monthly. 2:12-17. January, 1916.

selves supported by a principle more fundamental than they. Justice, equality, freedom, depend for their perpetuation upon intelligence and knowledge. The ignorant man is not a just man, he cannot make nor can he enforce or interpret laws of justice. The illiterate and unlearned man knows no freedom but license, no equality except that brought about through brute strength. For the securing of life, liberty and the pursuit of happiness to her citizens the various states of these United States have inaugurated and perpetuated a system of free public schools. In their wisdom, the founders of our nation saw the necessity for a liberal dispensation of learning among the people at large. Without it they knew democracy could not live—they knew that justice and freedom would perish from among us.

Said Jefferson in a letter to the Marquis de LaFayette, "Ignorance and bigotry, like other inanities are incapable of government." In his "Bill for the Better Diffusion of Knowledge" he says, "The public happiness demands that a people who wish to enjoy the blessings of good government should be possessed of a considerable amount of knowledge." Thus could the descendant of a long line of noble ancestry see the desirability—even more—the necessity, for intelligence and knowledge as a basis for the continuance of a democracy. The leadership of a few is not enough. There must be the intelligent and understanding co-operation of all or the Ship of State must fail of safe refuge and go down amidst mutiny.

Experience has proven the wisdom of an intelligent citizenship in a democracy.

But it all has a deeper and more vital significance. What is the source of these laws? Whence have these legislators come? Are they all sons of aristocratic and noble lines of ancestry? From mountain cabin and fisherman's hut, from the home of the farmer and the hut of the lumberman, have they come no less than from the desk of the business man, the office of the lawyer or the library of the man of leisure. Who really have made the laws? Who really do the interpreting and enforcing? It is not the legislator, judge and police. It is the people back on the land, in the office, beside the loom, upon the mountain and down in the valley. These others are but delegates who are carrying out the will of the people; the *people* make the laws, enforce them and interpret them. Such is the position of the populace in a democracy.

What then does it mean? Who should be the intelligent ones? Who should be educated? There can be but one answer—the common, every-day man of the state. It is with him that the demands for new legislation must originate and it is he who must and will insist on his demands being executed. The laws are made by and exist for the man at home, and upon him rests the responsibility and duty of providing for wise and efficient legislation. The ignorance of the voter who sends the legislator to the capitol blocks the way to intelligent laws and statutes.

It is not enough to train and develop a few great leaders. To be sure, leaders must be trained and developed, we must have great souls to go before and choose the way. But does such a truth preclude the necessity for an intelligent following? Surely not in a democracy. What a travesty upon the quality of our leaders to think they would prefer an ignorant, illiterate, babbling, unthinking crowd of followers to an army of educated, trained, thoughtful, intelligent citizens. It is an insult to our leaders to place them at the head of anything other than the very best trained minds and intellects of our state. We must build up an educated race of citizens who shall wisely and justly carry on the great work of building up a magnificent and powerful commonwealth which shall be the glory of her citizens and the pride of the nation, that the fathers who have gone and left us the inheritance need not be ashamed of the use to which we are putting their heritage.

How can it be done? The answer is simple. By the free public school. All about us are the boys and girls of today, the men and women of tomorrow. Here is the material put to our hands for the moulding. They are like to the potter's vessel, we may shape them as we will. Here we have the citizens of the next generation, whose making is in our hands. What are we doing for them? Think what a wonderful opportunity is put before us. To us is given the privilege of formulating the ideals, the principles to which our state, our nation, shall be committed in this next generation. We hold in our hands the possibilities of the next few years for our people. As we make these oncoming citizens intelligent, honest, upright, far-seeing, clear-thinking—to the degree will our state, our nation, be able to take its place among the peoples of the world as the exponent of true democracy, freedom, right and justice.

So you see it is more than a privilege, larger than oppor-

tunity. There is a duty, a responsibility that goes with our opportunity. The problems of government are being greatly complicated as our nation takes on size. In the early days our manner of life was simple, our problems of government were few. Now we are a world power, we have a place among the peoples of the earth. Our internal organization is increasing in complexity and intricacy as we evolve our industries, build up our cities, exploit our lands and take into our midst the nations of the earth. We are reaching out our hands over the world and gathering in the peoples of all lands, offering to them a place of growth and development. In vast hordes they are coming to us daily and we must remake, remold and refashion their social, political, economic, religious, domestic ideals. Such is the burden which is being laid upon us and which we shall pass on to these boys and girls of today.

To handle wisely and well, with justice and righteousness, these immense problems we must build upon a wise and intelligent body of citizens who know the right and fearlessly go about doing it. To place the handling of these great problems of government in the hands of ignorant citizens would be nothing short of a calamity. A burden is laid upon us to provide learning and education for *all* the children of this generation that they may be in a position to handle the problems of government which are so rapidly increasing in complexity. It will not be enough that we supply an education to the few but we must give to all an equal and even share of an education. The great questions of the next decade will come before the leaders but it will be the opinion, attitude and will of their constituents which will be the deciding factor in the settlement of these questions.

The founders of our nation builded better than they knew. Deep and secure they placed the great fundamental laws and principles of democracy. Into the hands of the people at large they placed the power to act. Then to perpetuate a surety of justice and freedom they placed in the hands of the individual states the duty of educating and training the citizenry. They solved the problems they had to face and then paved the way by which the newer, larger and more far-reaching questions might be solved by committing us as a nation to the principles of free education for all the people. When the deeds and virtues of this generation are held up before the future generations, shall they too see how carefully, wisely, surely, *we* have provided a way,

a means, by which the great problems they are to encounter shall be met? Are we sensible of the duty we have? Are we performing that duty to the best of our ability? Are we making our boys and girls intelligent?

The implication of all this is not to provide a college or university education of *all* the boys and girls of the state. Rather it implies the furnishing of a very different sort of an education. The thought which has been back of all this discussion of the need of education as the bulwark of democracy is of furnishing a training along intellectual lines which will be closely adapted to the needs of the children who can go to school no more than up to the age of fifteen or sixteen. We must reshape our ideals as to the type of education we are to furnish our children. We must find some way of providing a system of intellectual training which shall have an appeal to the boys and girls and keep them eager for new knowledge and receptive to new truths.

This new education must set up several new lines of effort. In the first place we must provide a longer school year. As it is now a boy beginning school at 6 or 7 and continuing to 15 or 16, if he attends all the time schools are in session every year according to law, gets a little over $4\frac{1}{2}$ years of school life (54 mo.) and in many places not even that much. Consider what that means. We are providing $4\frac{1}{2}$ years of education for the men, who, 10 years from now, will be making our laws, handling our immigrants, settling our international relationships and controlling the destiny of our nation. It is not enough—the foundations of learning need to be laid deeper and broader. We need, we must have, a longer school year and more stringent laws as to attendance.

In the second place we must make over our courses of study. We must eliminate the fads and frills and get back to fundamentals. By this I mean get really back to the fundamental subjects which the human race studied in its very earliest glimmerings of knowledge and reasoning. Man first learned how to get his living from the soil and the forest, he first learned how to live well. Then when he had provided for the means of sustenance, and had laid by a surplus, he found it necessary and pleasant to indulge in reading and writing. To facilitate communication between himself and his fellows he invented a language and a means of preserving his thought by writing it down.

But reading and writing were fads—frills—of education; the real fundamental education was hunting, farming, housekeeping, the making of clothes and preparing of food.

We must first of all provide a decent and comfortable living for our children and since we are an agricultural people, getting our living from the soil, we must teach our boys how to get a *good*, not only a *meagre* living from the soil and we must teach our girls how to help their future husbands by keeping the home clean and by providing sufficient and nutritious food. If necessary we must omit some of our so-called "liberal studies" and put in subjects which shall touch their lives at vital points. We must get back to fundamentals in our education. At 12 years of age boys and girls are just coming to their inheritance. They are entering that period of life when they are neither children nor adults, when they are putting away childish things and taking on the things of mature life. Especially is this true of the girl who is then for a few years actually and literally building the nest in which future citizens shall be born. The long hours, the severe strain of standing, the necessity for working when wholly unfit, all are inevitably tending to weaken and to break down the mother of generations yet unborn. We are sacrificing every year our boys and girls to the god of money. We are thoughtlessly neglecting and ruthlessly wasting human life. Until we can find some way to keep our children out of mills and factories until they are 16 or 18 years old we shall go on cutting away the very foundations on which our state, our nation, is founded. If for no other reason than a purely political one we must protect, and we must compel others to protect, the lives and health of our boys and girls up to 16 or 18 years of age.

Finally there is this fourth thing. We need to have more regard for human life. At the present time school laws permit children 12 years old to leave the out-of-doors, the fresh air and sunshine, the elevating and ennobling influence of the school and to enter the close, over-heated, gloomy, unsanitary mill and factory.

What then is the burden of my message? I put it in the form of a plea. In order to conserve our national life, in order to protect our national honor, in order to preserve to posterity the principles of democratic and representative government, I beg you, give to the public school officials your heartiest support and urge upon them the necessity for a longer school year, a

vocational course of study, better trained teachers, and a more stringent compulsory school law. If you will do this, the few short steps we have taken so far in this 20th century shall be lengthened into great strides of progress; succeeding generations shall call you blessed; and your own life shall be sweeter, nobler, more complete.

THE PROGRESSIVE SCHOOL: ITS RELATION TO COMMUNITY INDUSTRIAL LIFE¹

The school that is not directly and helpfully related to the occupational life out of which it springs and by which it is supported is not progressive. It is unhinged and out of joint. It is ancient, musty and fusty; befogged, bewildered and belated. Why should a community receive a stone when it asks bread of its school?

Occupation and bread mean business and life; they signify making a living, living a life, and saving a soul. They concern the human and the divine necessities and possibilities of our children; the matter of their bodies and the fire-mist of their souls—the bread, kingdoms, stars, and sky that Emerson sings. So much, to indicate that I do not have in mind a crass materialism and nothing more when I recognize the imperious, inescapable trinity of food, clothing and shelter as a primary problem for the schools to consider.

In ways more or less successful, in this large sense, various schools are relating themselves to the industrial life of their communities—the farm-life schools in North Carolina, the agricultural high schools of the various states, the Page county schools in Iowa, the folkschulen of Denmark, the schools of Ontario, the John Swaney school in Illinois and similar schools in other states, the school of Fitchburg and Gary; the college of the City of New York, the universities of Cincinnati and Pittsburg, the state universities of Wisconsin, Texas and North Carolina. This, for a brief list. There are many others that deserve mention. The bulletins of the Federal Bureau of Education acquaint you with them fully.

¹By E. C. Branson, Rural Economics and Sociology, University of North Carolina. Educational Monthly. 2:18-20. January, 1916.

But when listed at length, such schools are few when compared with the countless schools of all sorts that are drifting along undisturbed by the modern demand that schools be efficient agencies of social adjustment and uplift. Their courses are still formal, abstract, and academic. They still think that the further away a thing is in time and space, the better worth studying it is. They are serenely unconcerned about the near, the here, and the now.

Second. There is a nearby world of things to be explored; and the knowledge gained quickens and makes alive. There is a nearby world of opportunities and possibilities, puzzles and problems that challenge action, constructive and curative. It is the home-community, the home-county, the mother-state. The student who knows his home community thoroughly will interpret New York sanely by and by—or the Greece and Rome of glory and grandeur.

Community studies concern local geography and history. They direct attention to origins, racial strains, noteworthy events and achievements, historic localities and memorials; to libraries, schools, churches, charities, and other organizations and agencies of social uplift; to community building leaders and their contributions to the material and spiritual wealth of the community.

But also they concern community resources and their development or neglect; populations, occupations and industries; economic classes and conditions; the factors in the production, retention of community wealth, surplus wealth and its relation to the self-sustaining, self-protecting, self-elevating abilities of the community; market and credit conditions; organization and co-operation, civic, social, and commercial; the facilities for communication and transportation; public health and sanitation; recreation and amusements; school, church and Sunday school conditions and problems.

Here are the forces, agencies and institutions that are creating opportunities or obstacles; that are making or marring community destinies. And here are direct homespun studies that train for effective citizenship and generous social service.

They are large subjects and they need simplification for immature minds. It is our task at the University and yours in the grammar schools.

In addition to the direct study of local conditions and needs there must be the vocational activities that will react beneficially

upon the social life out of which the pupils come and back into which they will return. An expert study of occupational surroundings will determine just what such school activities ought to be. Such a study saved Richmond some \$200,000 a few years ago. The Gary plan suits Gary. The Fitchburg plan suits Fitchburg. Only the Raleigh plan will suit Raleigh, and only the Greensboro plan will suit Greensboro.

In the French schools we found courses in housewifery, drawing, light, shade, and color everywhere; but in the goldsmiths' district of Paris we found the tool work and decorative design concentrated upon jewelry and gold and silver wares; in the millinery district, the vocational emphasis was laid upon artificial flowers and hat designs—confections, they called them. In the furniture and mantle making quarters we found that the vocational activities of the schools were directed to developing artistic invention, taste, and skill in these particular trades. They were making artists out of artisans, and thereby raising the level of the school neighborhood.

In quite the same way our country schools need to be adjusted to country-life surroundings—as they are in Page county, Iowa; but in Alleghany or Catawba or Sampson or Beaufort the problem is individual and unique in each case. Nothing can be adopted; everything can be adapted. The country school problem can be solved by the country-minded teacher; the teacher whose soul is saturated with country-mindedness, and by no other.

And the solution will not be found in bread-and-butter studies alone. The country school must give the country child a new outlook upon country life, its meaning, its possibilities of satisfaction, and its enjoyments. It must lead him, as the Danish schools do, into literature, art, and music, as well as teach him the tillage of fields, the care of animals, and the laws of markets and credits.

SECURING EQUALITY OF OPPORTUNITY¹

Equality of opportunity can be secured only by proper recognition of (a) individual differences in native capacities and in social environment, (b) the requirements of vocational efficiency as well as of (c) general intelligence and executive power.

Upon first inspection the main proposition, with its several corollaries, seemed to be so axiomatic, and the character of an existing opinion regarding industrial education indicated in general such unanimity, as to render any effort at demonstration as simple and useless as shooting at the classic "barn door." A more careful examination of this apparent axiom, and a more critical analysis of the implications of contemporary educational opinion, revealed a series of problems of more or less difficulty and intricacy. Thereupon the whole question changed its cloak of simplicity for one of complexity.

At the first step of our examination and analysis, we are confronted with sharp distinction between the theory and the practice of our system of public education. The land resounds with exclamations of loyalty toward a genuinely public education—an education for and by and of the people; yet how few and far between are the parents, the teachers, the communities ready and willing to make the change of educational creed and to offer the financial sacrifice demanded by their seeming loyalty. There is, I believe, a fairly reasonable explanation of this chasm between words and deeds.

The American public school rests upon the basis of the performance of a political and not an economic function. The cabalistic symbol of democracy—equality of opportunity—has possessed meaning for education only when attached to the political life. The history of the whole social movement for democracy, which has found its best expression in and thru the public school, is the history of a more or less conscious attempt to make politically efficient people. The mediocrity of our success in the maintenance, thru education, of the condition of

¹ By Edward C. Elliott. National Education Association. Proceedings, 1908:159-61.

equity in political opportunity seems to have hastened the employment of the symbol of democracy for the maintenance of equity in economic opportunity. And with this has come the dim recognition of the probable insufficiency of the whole formula of equality. The problem of equality of religious opportunity in education has been solved by complete elimination; that of equality of political opportunity by a method of superficial inspection; that of economic opportunity by the fantasy of anticipation.

In fact, "equality of educational opportunity" bears every stamp of academic and philosophic abstraction. It never was, nor never will be, an ideal capable of realization. What we have, and shall attempt to bring about thru our public school, is an equilibrium, a balancing, of educational opportunity. Equality is significant of similarity, identity, of reward. An equilibrium of opportunity implies that grade of reward commensurate with capacities, whether those capacities are of the endowments of nature, of the acquisitions of training, or of the fullness of family coffers. The maintenance of such an equilibrium of educational opportunity will result in giving to industry its rightful share of competence, and give to education for vocation its rightful share of respectability; neither of which may be said to obtain today.

Viewed largely, four forces may be said to contribute to the drafting of individuals into industry and to the selection by individuals of a vocation. The social, concerned mostly with artificial distinctions of social grade and rank; the economic, dominated alone by material reward; the personal, guided by indistinct individual interests and desires; and the educational, directed by ancient traditions of intellectual discipline. Each acts consciously or unconsciously; with few exceptions unconsciously, and this unconscious mode has ever been favored by formal education.

The chief argument in support of the main proposition that some definite preparation for vocational activity, especially industrial, within our scheme of public education, may be derived from the necessary improvement of the acknowledged selective function of the school. At the present moment, the distinct tendency is toward horizontal stratifications of individuals into social classes, instead of a vertical selection according to specific efficiency. Vocational industrial education for all is no more

likely to yield larger social results than the traditional, pseudo-cultural, static education of the present, unless it becomes consciously selective, unless it consciously fits the square industrial worker into the square industrial hole, the round worker into the round hole, the triangular worker into the triangular hole.

All educational reform passes thru four stages—the stage of stress, the stage of investigation, the stage of propaganda, the stage of reorganization. Of these, the stage of investigation is by far the most difficult of passage. What is needed today, before we can proceed with saneness thru the stage of propaganda on to the stage of rational reorganization, is investigation; facts, “Gradgrindian” facts pertaining to industry and to children. We need to determine first of all, the extent of the demand for trained workers in specific fields of industry; we need to determine the character and quality of the specific interests and capacities needed by specific industries. Above all, we need to determine the extent actual and potential, of the individual possessions of these specific interests and capacities. Here opens an entirely new field of activity for the study of social needs, and for the study of the pupils of the public school.

This study of social needs, this evaluation of industrial conditions, can be carried on successfully according to projected plans by a comparatively few trained scientific and skilled investigators. But the study of the individual vocational intelligence and interests, ideals and capacities, motive and necessities of the American boy and girl must be carried on, in the largest measure, by the school. Yet the school dare not assume the responsibility for such study, until there is raised up a new generation of public-school teachers—especially in the elementary schools—who know how to detect, to classify and to direct the potential industrial powers of the child. Even given such teachers, this goal is not possible until we rid ourselves of the factory, piece-work system of education of our graded school. This of itself is an almost sure preventive against knowing very much about any individual pupil. The sum total of the superficial observations of eight or a dozen teachers, each of whom has an opportunity of studying and knowing the child merely thru one-half of a year, or at the most, thru a whole year, will not equal one-tenth part of the insight that a skilled, observant teacher might obtain, did the machinery of the public school permit close contact between the teacher and the pupil, thru several years.

Until we possess reliable data upon which to base a rational scheme of reorganization, the public schools cannot hope to become instruments for "industrial determination;" neither will they cease to prevent mis-selection of individuals for their proper station of efficiency and happiness. For a rightful selection must precede and underlie the maintenance of the educational equilibrium of democracy.

A PHASE OF THE PROBLEM OF UNIVERSAL EDUCATION¹

Rightly or wrongly, for good or for ill, we are committed to a policy of universal education, a policy whose wisdom, I believe, has passed the stage of discussion among thinking people.

Now, no system of education, however good in itself, can claim to be or hope to become universal if it does not touch and benefit all classes of men, and all legitimate branches of their activity, both industrial and non-industrial, vocational and non-vocational. Indeed, universal education means exactly what it says—the education of all sorts of men for all sorts of purposes and in all sorts of subjects that can contribute to the efficiency of the individual in a professional way or awake and develop the best that was born into him as a man and a human being.

Looked at in this broad way, industrial education does not differ logically from any other form of professional training that requires a large body of highly specialized knowledge. Nor do industrial people, as such, necessarily constitute a class by themselves, but are men like other men, who love and hate, who earn and spend, who read and think, and act and vote, and do any and all other acts which may be performed by any other citizens. Now all of this leads me to maintain the thesis that industrial education is not a thing apart but is only a phase, albeit an important phase, of our general system of universal education, a thesis that is the more plausible when we remember that all men need two educations—one that is vocational and one that is not; one that will fit them to work and one that will fit them to live. When we remember that there is less difference between industry

¹ From an article by Eugene Davenport. National Education Association. Proceedings. 1909:277-88.

and occupation than we once assumed; when we remember that 90 per cent of the people follow industrial pursuits and will continue to do so; when we remember that all major industries like other essential activities must go on in the future as in the past, even tho every man in the community were a college graduate, and when we remember that it is for the public good that these major industries be developed and occupied by educated men, surely this position is not unreasonable.

All parties are agreed these days that in order to secure a fair degree of efficiency in some way some sort of specialized instruction should be given in industrial pursuits. The old apprentice system has passed away and the work of instruction for industrial efficiency seems to be thrown upon the schools. It is a new problem and they appear not to know quite what to do with it. It is perfectly clear that industrial education calls for new and different courses of instruction from those designed to fit for non-industrial pursuits, and the question is whether these constitute a part of our public schools duty or whether the peculiar educational needs of industry and of industrial people may be left to take care of themselves. In discussing industrial education, as with all other forms of education, it must always be remembered that we are dealing with the man as well as with the craftsman, and I use the term craftsman in its broadest sense to cover the work of the lawyer as well as that of the farmer.

But no scheme of education is truly universal or can hope to become so until it not only touches and uplifts all classes of men but also touches and uplifts their industries as well; for it is not expedient that men should desert industry as soon as they are educated, but rather that they should remain and apply their education to the development of the industries, that the people may be better served and the economic balance of things be not disturbed by the evolution of an educational system aiming to become universal.

But as yet we have no system of *secondary* education that can be called universal and until the matter is settled, and settled right at this point, our system is weak at its most important level because it is our secondary education that touches our people during their formative period and that really reaches the masses in such a way as to be truly universal in extent.

I say that our secondary education is not yet universal. True,

the high schools are open to all who have finished the grades, but they do not offer to most classes of people that instruction which is a preparation for life and which the needs of the time and the impulse of the people demand.

The high schools took their cue originally from the old-time academies which were training-schools for classical colleges. Since then primary education has become universal because it involved nothing but opening the schools to all the people free of tuition. The education of the colleges has become, or is rapidly becoming, universal because the people demand that the benefits of higher education shall not be limited to a few favored occupations and those who follow them—all upon the ground that such a course would be pernicious because against the public welfare.

The same influences are beginning to work in our high schools, which are moving in the wake of the colleges, it seems to me, in a way that is wholly commendable, and that needs only to be accelerated and not retarded.

The high schools are schools of the people and in response to their demand they have added to the old-time classical courses those in modern science, in manual training, in household science, and indeed, many are now adding agriculture, stenography, telegraphy, bookkeeping, type-setting, and a list of vocational courses almost too long to be mentioned, all without prejudice to, but vastly to the enrichment of, the old-time courses of study.

So the high schools are rapidly following in the lead of the colleges and if matters go on as they are now drifting in some of our best schools, it will not be long until, in response to public demand and common-sense, we will have a complete system of universal education in the large sense of the term and of all grades from the elementary schools upward, in which men and women of all kinds and preferences will be able to get that education which will not only fit them for life but fit them to live. In the name of progress let this good work go on.

There are but three influences, it seems to me, that can interfere with the proper evolution of the high schools. They may be outlined as follows:

1. The movement in certain quarters for separate industrial schools—agricultural schools in the country and trade schools in the city—quite in-

dependent from the high school system which is assumed to be indifferent if not antagonistic to industrial life.

2. The attitude of a few remaining exponents of the old idea that schools should teach nothing that by any possibility could be put to any manner of use.

3. The difficulty involved on the part of the high schools in adding not only to their educational purpose but to their courses of study, their equipment, and their teaching force, with sufficient rapidity to meet the new demands and mold the whole into an educational unity without such delay as shall make the claim seem true that after all the high schools have no real desire to serve the people in their industrial activities, but will do no more than is necessary to half satisfy what they regard as an irrational public demand. Thus the high schools are put at disadvantage at this most difficult period in their evolution, particularly as teachers are yet to be made even while these new ideals are to be fitted into and made a part of our permanent educational policies.

Now these considerations are worth reviewing at the present juncture, because what the high schools need is time, and this is the element in the case least likely to be afforded. The activity of certain educators in favor of separate agricultural schools of one kind or another, and what I am bound to call the selfish influence of certain commercial interests demanding city trade schools to teach that sort of handicraft which will produce skilled workmen in the shortest possible space of time and best enable us to meet foreign or other competition in manufactured articles—this activity and this influence seem ready to sacrifice almost anything for immediate results. This American edition of the German peasant school idea is most dangerous because a most insidious and powerful menace to the right development of the American high school, which is or may be the most unique educational institution on earth, and which will constitute, if it can rightly develop, the key to the advantageous position which America ought to occupy both socially, politically, and economically, and which she can occupy if she is far-sighted enough at this point and at this time.

If present tendencies can go on unhampered, it will not be long until every community can have its high school which will reflect with a fair degree of accuracy its major industries and do it, too, in the light of the world's knowledge and of the world's ideals. Such schools will turn out men and women ready to do the world's work and think the world's thoughts as well as to dream the world's dreams and share in its ambitions. If we combine our energies we can have such schools in America

wherein every young man and every young woman can secure an education that is at once both useful and cultural, and that, too, within driving distance of the father's door. If we unite our educational energies we can do this but we cannot do it in separate schools.

We can combine the vocational and the non-vocational in our high schools if we will and each be the better for the other. On the contrary, if the arts and crafts and industries are taught in separate schools the following results are inevitable:

1. There will be as many different schools and as many different forms of education as there are different forms of industry, with little of mutual sympathy and nothing of community of purpose.

2. The vocational future of the individual will be decided not by intelligent choice but by the accident of proximity to one of these schools or the exigency of earning power.

3. If industrial education is given only in industrial schools, then the high schools will lose forever their hold upon the masses, for 90 per cent of the people are industrial and always will be, and boys will follow occupational instruction. This will reduce the high schools to the teaching of the girls and the work of preparing for college and they will lose forever the influence upon American life which they might exert by molding the ideals of the masses as they instruct them in their industries.

4. The separate industrial schools will always be inferior to what the high schools might be, for, being established to serve special ends, they will naturally attain those ends by the most direct means possible; indeed they must be almost exclusively technical or else resort to an amount of duplication and expense that would hardly be tolerated by their patrons.

5. The products of these schools would be successful from the narrowest business standpoint; but unsuccessful from the larger point of view; they would be trained rather than educated.

6. Such schools would force boys to choose their calling or indeed have it chosen for them at a very early age, and without much opportunity for an intelligent choice. Once chosen, however, the decision would be final. The results, however, would greatly satisfy business demands which are ever ready to sacrifice the man to his efficiency.

7. If members of the several vocations are to be educated separately the education will not only be hopelessly narrow and needlessly expensive but, what is even worse, our people will be educated in groups separately, without knowledge of or sympathy for each other, producing a stratification of our people that is not only detrimental to society but dangerous if not fatal to democratic institutions. Such schools will, however, draw the masses and have all the surface indications of success.

So, all things considered, I most earnestly advocate the taking over of our industrial education in all its forms into the existing system of secondary schools, seeing to it that one-fourth the time of every pupil is devoted to something voca-

tional, something industrial, if you please, and no industry is too common for this purpose. It is the common things of life that are fundamental and it is thru them that we teach life itself.

It is not necessary to bring all occupations and industries into our schools; some are not well adapted to our academic conditions, but it is necessary that we bring in a goodly variety of what may be called the major activities, industrial and non-industrial, in order that life shall be taught in a variety of its forms and that the boy shall have a reasonable chance for choice.

Trade schools, would you have them? By all means, but I would have them as a part of the secondary school system. Agricultural schools? Yes, but as departments of the high school. Cooking schools? Yes, and more: I would have schools of household affairs, but I would have them as integral parts of the high school. Schools of stenography and typewriting? Yes, but I would not disconnect them from the high school any more than I would cut off from womankind the girl who needs perhaps for a time, perhaps always, to earn her own money.

In brief, there is no class of occupation followed by large masses of people that I would not bring into the high school and teach as fully as circumstances would permit, and I would compel every student to devote not less than one-fourth and not more than one-half of his time to these occupational lines.

I have said that a second influence operating to restrain the high schools from moving in this matter as fast as conditions require is the remnant of an old academic belief that the purpose of schools is to "make men," whatever that may be, as distinct from making men ready for life. These are they would teach nothing that could by any means be put to any sort of use. With them education is a luxury, not a necessity, a kind of holy thing that evaporates or in some way loses its essence when put to common uses or into the hands of the masses of men.

These be they who are always speaking of industrial education as "training," using a term whose meaning is understood from its frequent application to horses and dogs.

Now to such let me say that the thing which all men everywhere now demand, whatever their vocation or means of livelihood, is not training merely but *education*, and they mean by that such contact and intimacy with the world's stock of knowledge as shall first of all develop the industry, and second, but not secondarily, develop also the man.

Thinking men now know that, education or no education,

culture or no culture, whatever the grade of civilization we may evolve, certain fundamental industries must still go on. Moreover, they know that if these fundamental industries are to be well conducted and our natural resources developed, then these activities must be in the hands of capable men; yes, of educated men, for industry, like every other activity of man, is capable of development by means of orderly knowledge and trained minds.

They know, too, these thinking people, that men of capacity cannot be found to develop these fundamentals except they may also themselves partake of the blessings of life and the full fruits of our civilization. They know that the days of the hewers of wood and the drawers of water, as such—condemned to a life of drudgery—are over on this earth wherever civilization exists, and that education, like religion, must somewhat rapidly readjust itself to new conditions and prepare to help the common average man to lead a life that is both useful to the community and a satisfaction to himself.

The aristocracy of education, like the aristocracy of religion, whereby a few were saved at the expense of the many, is over, and education, like religion, must help the common man to meet and solve the common issues of life better than they have ever been met and solved before—hence industrial education; hence vocational education; hence universal education.

These good people who shy at the term industrial education are remnants of a past condition when educators and others entertained that old-time and curious conception of industry, whereby industrial people were assumed to be uneducated and were by common consent assigned a social position of natural inferiority, as if a farmer or a mechanic, for example, acquired by his daily life a kind of toxic poison that not only destroyed his better faculties but was likely to exude and soil or injure others.

Let me call the attention of these good people to the fact that whatever their social status the industrial people hold the balance of power politically and socially, for they constitute 90 per cent of the population, and that for all practical purposes and in the last analysis they are the people, and their education, whatever it is to be, will really constitute our system.

The colleges learned long ago that to meet modern needs they must afford every man two educations: one intensely technical to meet his business needs and make him an efficient mem-

ber of society but which would tend to narrow him as a man; the other non-vocational, which has no money-making power, but whose effect is to liberalize and broaden the man by attracting his interests and widening his knowledge outside the field wherein he gains his livelihood.

Now the high schools must learn the same lesson and the sooner they do so the better for all interests. Therefore these high schools that are introducing the industrial are developing in the right lines. The high schools are not preparatory schools for college. They are pre-eminently the schools wherein the people are fitted for life. Where one man is educated in college, twenty will get all their preparation in high schools. The high school, therefore, is the place wherein the boy shall find himself to the end that if he goes to college he will have, upon matriculation, exceedingly clear ideas about what he intends to do, and if he does not he can go out from the high school at once and take some useful part in the world's work. The large number of high school men, even graduates, who have no plans and, more than all, no fitness, preparation or inclination for any sort of useful activity, is a pathetic and a dangerous fact—pathetic because so much good material has been wasted; dangerous because the high schools must either change their ideals and introduce the industrial freely, or the industrial masses will find other schools of their own that will meet their needs as they have been met on college levels but as they have not yet been met in secondary grades where the masses go.

Now the colleges have learned that it is not necessary to absorb all the time of the student in order to turn out an efficient man vocationally. Much less is it necessary in secondary schools. On college levels, from one-half to two-thirds of the students time suffices for the vocational, and when we learn better how to teach, results can doubtless be attained with still less, leaving a generous amount of time for the pursuit of the non-vocational and therefore of liberalizing courses, for the effect of a course of study, whether narrowing or broadening, depends less upon the subject matter than upon the attitude of the student and the purpose for which he takes the course. Chemistry is a professional study to the prospective farmer, while to the journalist or the lawyer it is non-professional and liberal.

If we honestly take into our high schools, as we have taken

into our universities, all the major activities, splitting no hairs as between the industrial and the professional, for no man can define the difference, so imperceptibly do they shade the one into the other—if we will take them all into the high school as we have already taken them into the universities, and carry them along together, the vocational and the non-vocational side by side, day after day, from first to last, so the boy is never free from either, then will all our educational necessities be met and we will have met a goodly number of substantial achievements, prominent among which I would mention the following:

1. One-fourth of the time of the boy or girl could be devoted to vocational work in the classroom or laboratory thruout the course.
2. This would turn out every boy with some skill in some branch of the world's work, and do away with that large and growing number of young high school graduates who are fitted for nothing and are good for nothing in particular.
3. It would attract the attention of the boy to self-supporting activity before he loses his natural ambition by too much schooling with no initiative.
4. It would turn out girls with some training in household affairs, and those who desired it in such occupations as women follow for self-support.
5. It would vastly uplift most occupations and all of the more ordinary industries by bringing into their practice the benefit of trained minds and methods.
6. It can do all this and still leave three-fourths of the time for the acquisition of those non-vocational lines of knowledge which all men and women need, because they are human beings getting ready to live in a most interesting world.
7. In this way, we should have a single system of education under a single management, but giving to all young men and women really two educations: one that is vocational, fitting them to be self-supporting and useful, the other non-vocational and looking to their own development.

Expensive? No more so than to have it done in separate schools, surely. It will be done somehow, and the only question now is, will the high schools really rise to their opportunity and secure thru themselves a real system of universal education, or are they to lose their chance and we to have in the end not a real but only a patchwork imitation of a system of universal education?

I am perfectly well aware that all this will be held by some as a lowering of standards and a degrading of education by commercializing it. Against this conclusion I protest most emphatically. Does it degrade a thing to use it? Does it degrade religion to uplift the fallen or to sustain the masses of men from

falling? Is education a luxury to be restricted to a few favored fortunates or is it a power to uplift and sustain and develop all men?

Are you afraid to educate the ditch-digger? Is the education of the gentleman too good for him? Are the facts of history too profound or the satisfaction of knowledge too precious to be common property of man? Does it make my satisfaction less when it makes his more, or are you afraid that he will climb out of the ditch if he is enlightened? There is no danger of that. I have dug ditch and laid tile every month of the year and that since I was a college graduate, and I am ready to do it again. I am ready to do my share of the world's work: yes, of the world's dirty work. It was Colonel Waring who cleaned up New York City. It was the educated engineer who made a sanitary Cuba. The educated man does anything that is needed to be done to get results. It is the uneducated or the badly educated who fails to comprehend the eternal balance of things.

I desire to call attention to one more phase of our problem, to what may be called our leisure asset. There are two leisure classes, one few and unimportant, the other large and important. The first consists of the idle rich who by accident were born after their fathers, and who intend to live a parasitic existence, paying for their needs with other people's money. They are altogether useless. It matters little how they are educated and the sooner they die off the better for the world. They do not think: they do not act: they only vegetate and glitter. The wealthy who do not belong to this class are too busy for leisure.

The other leisure class is the great industrial mass, who, after all, own and control about all the useful leisure in the world. The minister has no leisure. The teacher has no leisure. The lawyer, the leader everywhere, has no leisure. What he does he does under pressure and because he must.

But the farmer, the craftsman, the industrialist generally, labors only in the daylight hours and for a portion of his time. What he does with the balance of his waking energies is of the utmost concern. Here is the racial asset, both social and psychological; both economic and political.

If this great mass of men, constituting all but the degenerates, can be properly educated, the racial asset of their leisure moments will in the end be tremendous. It is this mass, and what it thinks and does in its leisure hours either blindly or

intelligently, that will ultimately fix the trend of our development and the limits of our achievements. It is better that they be educated broadly.

Moreover, it is out of this mass that leaders arise, and if their education be sound, then will our leaders be wise and safe. You cannot maintain any more an educated aristocracy. There will be but one aristocracy and that will be the aristocracy of personal achievement, and if we do not want the world entirely commercialized we must so merge our industrial education into our general system as to have in the end not a mass of separate schools with distracting aims and purposes, but a single system of education catering to all classes and all interests. It is the only influence that will preserve a homogeneous people.

In thus amalgamating the vocational and the non-vocational, I would like to say a word for what might be called the parallel system as distinct from the stratified. That is, I would have a boy from his first day in the high school to his last have to do with both the vocational and the non-vocational. I would have him every day take stock of things vocational in terms of world values. I would have him devote a full fourth of his time to what will bring him earning power, to be used for that purpose if he needs it, and to give him an independent spirit if he does not need it. Every man is a better man if he feels the power to earn his way, whether he needs to do it or not.

Do you say that this will so cut into his time as to prevent his getting an all-round education? Then I will say that he will never get an all-round education any way: that the most he knows at forty will be learned out of school and that the business of the school is to give him a good start.

I beg, too, for a reform in the idea that a course is framed mainly for the one who graduates. If the vocational and the non-vocational are properly paralleled the course is good from whatever point it is left, and whenever abandoned it has taught the student the proper balance between industry and life, between the means and the ends of life.

All this will take time because it means to some extent the readjustment of ideals, the addition of new courses of study and of new materials and methods of instruction. It means the making of a new class of teachers who must largely train themselves by a generation of experience. It means the making of a more complicated system of instruction than has ever been

undertaken—a system as complicated as American democratic life.

But it is worth the while, for nothing better is possible. It is easier, of course, to short-circuit the matter by assenting to the separation of industry and education, but no race need hope for supremacy or for the evolution of its best till it combines industry and education, which belong together in the schools as they do now and always must in life.

So I say to the high schools—Do not wait for approved courses of study, nor for the production of skilled teachers. Go ahead and do the best you can. An honest effort is half the battle, and it is worth more than it ever will be again. Do not hesitate till methods are marked out. If you do that, you and the cause are lost, for the separate industrial school will surely come. We know the ideal—an educated American in all the activities of life. Let us go ahead and produce him and mend our methods later on.

Education is no longer a luxury. It has become a necessity for the doing of the world's work. It is no longer for the edification of the few; it is for the satisfaction of the many. And whether we regard it as industrial or non-industrial; as contributing to the efficiency of men or to their elevation in civilized society; however this or any other educational problem is regarded they are all but phases of our general and stupendous problem of universal education, in the working-out of which there are as yet no models for the American secondary school.

VOCATIONAL EDUCATION FOR GIRLS¹

I believe the solution of every girl's problem is that, just like her brother, she should prepare for some useful work. Like the boy when prepared she should go out and look for a job. Her choice of work is what she likes and what she is trained for. Men no longer own all the jobs. We know now that all work is human; that no work belongs to a man because he is a man nor to a woman because she is a woman. Work belongs to the man or woman who can do it best, and the joy of reward belongs to that man or woman.

¹ From "Worth of a girl," by Bertha Pratt King.

If our girls are not trained to the right use of their gifts and their powers then our girls will suffer. That a girl should have an intellectual life, that she should have an interesting mind, that she should have her own career if she wants it, that a girl should be preparing for whatever work in life she desires—this is recognizing the worth of a girl. She has a right to be a human being of large knowledge, great feeling and wide experience, capable of the tremendous work of a woman and of a human being. The greatest wrong that can be done to girls is for fathers and mothers to deny them these fundamental human rights and to nurse in them romantic ideals of grandly ornamented idleness.

In these trying years when girls are realizing the necessity of such work we should give them every guidance and advice. Let us do for them what we would do for our boys. Let us teach them to acquire a serious work, to stay by it, to succeed in it. We women of today did not have to face these problems in our girlhood, but so speedily has the freedom of women come upon us that our own girls stand on the borderline of a most confused future.

THE ABSTRACT-MINDED AND THE MOTOR-MINDED CHILD¹

The different types of children in our school system may be illustrated by a straight line, one end of which might be called the motor-minded and the other abstract-minded. The motor-minded or hand-minded child is one with a craving for achievement, to do and not to study. He has a natural dislike for books and finds it possible to understand abstract principles only by having an actual experience with them. The abstract-minded or book-minded child is one who has no difficulty in committing to memory abstract principles and who likes to study books. Between these two limits are shades of different types. The average child is motor-minded rather than abstract-minded.

It is a well-known fact that during the first seven or eight years of life the child is interested in objects—material things. He is educated by objective teaching. Because the memory is formed during this period the average teacher makes a great

¹ From "Education of the Ne'er-do-well." p. 15-17. By L. H. Dooley.

mistake in eliminating the objective teaching which is so prominent in the first three grades. He assumes that the average child, without having any previous experience or contact with the experience which lie back of them, has a large power to grasp ideas, principles or abstractions given by the teacher or read out of the text-book.

While a very few children of this age have the power of committing to memory information without experience, the average boy or girl is concrete-minded rather than abstract-minded. He comes into possession or grasps new ideas only by experience with (actual) concrete situations in which he sees them illustrated and applied. The child whose experience conforms to an actual commercial experience will hold the principles or ideas involved better and will be able to apply them in working situations more effectively.

FEDERAL AID FOR VOCATIONAL EDUCATION¹

In theory every man should educate his own children; in practice he sometimes will not and sometimes can not. Schools are a necessity and compulsory attendance inevitable if we are to have an educated people. In theory a community should establish and maintain its own school; in practice many communities will not do this unless they are compelled by law and then they will maintain schools only at the legal minimum. The result of this is that many children as worthy as many others and afterwards to be citizens with them are curtailed in their educational privileges and through no fault of their own. The state, therefore, as a larger and more powerful unit, should intervene and compel the community, assisting it if necessary, to maintain a school comparable with those of the richer communities. For us to go on with this unequal development will result in an extremely uneven development over the country as a whole, giving the people of the various sections widely dissimilar ideals. It is imperative that these differences be reduced to a minimum, and for this reason federal aid for vocation is more than justified.

It is, however, in every way inadvisable that there should be

¹ From statement by Eugene Davenport to the Commission on National aid to vocational education.

a federal policy regarding education, because in the long run with some help and some suggestions the communities will work out their own salvation better than it can be worked out for them. Congress was wise in 1862 and since in so endowing the agricultural and mechanic arts in the various states as to bring about at least one college in every commonwealth where these two great subjects should be taught in such a way as to insure the development of these great fundamental industries in the hands of educated men. To these household science has been added, and commerce doubtless should be included.

The federal government has been wise up to date in contenting itself with devoting public money to the general cause of education in the various states, leaving to them the question as to what should be taught, how it should be taught, and the particular machinery for giving instruction. Perhaps some additional administrative responsibility should have been exercised over the earlier funds, but as a whole the results of the land grant and its supplementary acts have been eminently successful, not only in beginning the work of education along certain vocational lines, but in stimulating the states to add to the funds for the same purpose many times as much as they have received from the federal sources.

There remains, in my opinion, but one thing more for the federal government to do for vocational education, namely, to endow secondary education in agriculture, mechanic arts, household science, commerce, and perhaps one or two other lines, on precisely the same plan that it has endowed education in mechanic arts and agriculture in the colleges during the last century, leaving to the states the question whether they should discharge this duty through separate vocational schools or whether they should proceed, as I have indicated, by introducing as rapidly as possible the element of vocational education into all the schools. Conditions differ and ideals differ. Upon matters as large as this I believe that the states should be left free to act. If they are left unhampered they will determine in good time whether the public school system should be to some extent vocationalized or whether it should be kept free from vocation and other schools developed.

FEDERAL AID FOR VOCATIONAL EDUCATION¹

I. It is expedient and desirable that aid be given by the National Government for encouragement, promotion, and assistance of vocational education in the various states in the Union.

II. Such aid should be given to the states only for carefully specified forms and grades of vocational education.

III. Aid should be given only after the state, either through the state as a whole or through local areas, establishes and maintains an approved quality of vocational education in any particular direction.

The contribution of the national government should in no case exceed the amount raised by the state and its local areas for maintenance.

IV. National aid should be given to a state only when the state has organized a distinctive and responsible body to supervise the expenditure of funds for vocational education. This local body may be the state board of education, but its constitution, with proper executive officers, should be approved by the national government.

V. National aid should be given in the form of reimbursement for local expenditures already incurred, the national government reserving the right to withhold any particular amount in the event that the local work for which reimbursement is claimed does not appear to meet satisfactory standards.

VI. The national government should endow some national agency with proper authority, powers, and facilities to supervise the expenditure of money appropriated by the national government to aid vocational education. This national agency should be placed in a position to develop standards of efficiency in vocational education, to define the conditions under which any particular state should share in the national grant, and in general to insure that national money should be wisely spent.

VII. The national agency should be placed in a position to inspect, to whatever extent may be required, the schools and types of education for which reimbursement is sought.

¹ Statement by David Snedden, Commissioner Massachusetts Board of Education, May 5, 1914.

FEDERAL AID FOR VOCATIONAL
EDUCATION¹

The economy and success of any federal plan for aiding vocational educational in the several states will ultimately depend upon proper prevision and adequate provision for a properly trained staff of competent teachers of the several vocational subjects. Any plan that does not guarantee that the scheme of federal-aided vocational education will be under the oversight of such a trained staff is certain to lead to waste and inefficiency.

Practically all of the public enterprises for vocational education are to-day handicapped by the absence of properly trained teachers. It is therefore very necessary for the present commission to consider two essential issues:

First, the desirability of providing direct aid for the training of teachers in the several types of state institutions—normal schools, agricultural colleges, and universities. Provisions will need to be drawn most carefully so as to avoid duplication of effort on the part of these institutions, and any conflict of institutional interests; second, the formation of conditions whereby any federal funds designed for the support of vocational education in the states shall be expended only in schools staffed with teachers of approved training and competency. The approval of such training and competency should be left with some responsible federal authority.

FEDERAL AID FOR VOCATIONAL
EDUCATION¹

(1) In presenting this memorandum I do so as the chairman of a committee of the separate state universities; not of the non-technical universities, as they have been designated by members of the committee, but of those state universities that do not have departments of agriculture. There are 20 of these state

¹ Statement by Edward C. Elliott, Professor of Education and Director of the course for the training of teachers, University of Wisconsin, on behalf of the conference of the Department of Education in state colleges and universities, April 20, 1914.

² Statement by Franklin B. Dyer, Superintendent of Public Schools, Boston, Mass., April 30, 1914.

universities, and, having a real experience in the effects and influence of federal legislation on education, they feel strongly that legislation by the federal government should be undertaken only after the most careful review of all the problems involved.

(2) The presidents of these state universities believe in vocational education and the necessity of doing much in that direction. Direct appropriations from the federal government to districts and school bodies would mean little incentive and might mean much demoralization because of the inability of any legislative body to make rules that would apply equally to all parts of so varied a country as this.

(3) The amounts appropriated, while large in the aggregate, would have but small influence upon the development of schools.

The problem of education is essentially a state and local problem. There is no reason why one state should be called upon to aid another state in the work of education. The place to solve vocational education in New York is in New York, and the backwardness of the communities in accepting this view does not justify calling on the federal government.

(4) Moreover, the tendency to run to the federal treasury for every need, and in the case of financial assistance for any movement not otherwise provided for, must be viewed with alarm and looked upon as likely in the long run to mean heavy federal taxation and a limitation upon the fiscal systems of the individual states. Besides, such action opens the door to any and every appeal for funds which may be as fully justified in one instance as another.

(5) The advocates of this form of subsidy for vocational education will fail to find in European experience any support for their contention. In Germany the states, municipalities, guilds, and merchant associations work together to develop vocational education without aid from the imperial government. Each state deals with its problem as seems wise and necessary. Thus, one-half to two-thirds of the cost of maintenance of such schools are provided for by the states, but the buildings are constructed by the municipalities and the balance of the expense met by the cities and the merchant and guild associations. The proposal to appropriate money from the federal treasury on the basis of population makes it a sectional and class legislation proposal.

I. If there is to be federal legislation on vocational legislation, what should it be?

(1) In view of the fact that the economy-of-time problem is unsolved in our school system, there is in reality no provision for a place for vocational education. In the European systems of education the vocational training has a place in the system, but with our system of eight grades and four years of high schools the vocational training has no opening for real development.

Here at once is a real difficulty that brings the problem into the realm of propaganda and necessitates leadership and direction. This the Bureau of Education could bring about, and without such reorganization any system of vocational education must languish. Appropriations for investigations and encouragement of real progress in dealing with the problem under the direction of the Bureau of Education would be most helpful. This, however, is a distinctly different proposal from the one made to appropriate funds from federal sources for direct aid to vocational education enterprises in the different states on the basis of population.

(2) In addition, the utilization of the state departments of education under the general supervision of the federal bureau, in working out the problem of vocational education, would bring each state into touch and at the same time place the work under general supervision for purposes of uniformity. Such suggestions are quite out of line with the proposal that federal appropriations should be made to schools undertaking certain forms of vocational training, but they are fundamental in that they deal with the basis of a vocational educational system and hold the development along essentially national lines.

III. Conclusion

(1) It is therefore hoped that the commission appointed by the joint resolution of Congress will be willing to see the crudeness of any legislation that merely hands out money to separate states to engage in vocational educational enterprises.

(2) While it is evident that a number of years must pass in developing a vocational educational system, real wisdom calls for leadership and a constructive program, which is all that the federal government should be asked to contribute.

(3) The result can be brought about through the agency of the Bureau of Education in cooperation with the state departments of education in the different states, and all the benefit of uniformity and incentive to the movement be secured.

FEDERAL AID FOR VOCATIONAL EDUCATION¹

The stimulus afforded by national grants seems to be absolutely necessary in order to place the importance of vocational educational squarely before the country.

Again, the distribution of these grants upon some uniform condition will standardize vocational training as nothing else could and prevent waste of money and energy in experimentation.

Further, the value of industrial efficiency is of nation-wide importance and not merely local.

The order in which the different forms of vocational education should be associated is as you have placed it in your list: First, agricultural; second, industrial; third, commercial; fourth, home economics. I should place the training of teachers ahead of all the others, however, or, at least, parallel with the others. I am also inclined to think that industrial education is in parallel with agricultural education rather than beneath it in importance. The education of the city workman should be looked after as well as the country workman.

It would appear to me that the Bureau of Education is the proper institute for disseminating information; at least, it should be in one distinct department to prevent confusion.

I think that grants should not be given as gratuities, but under condition of the local authorities bearing part, at least half, of the burden and conditions of standardization that would be approved by the national government.

In granting federal aid it seems to me that it would be well to begin with a few schools which should be developed as examples of what may be done, and then extend aid upon the basis of the knowledge gained by these experiments.

There is no doubt of the propriety of the government designating in extreme detail the way in which money shall be expended, but I do believe that there should be clearly defined restrictions and standards set up.

¹ Statement by Frank L. M'Vey, President University of North Dakota, May 6, 1914.

INDUSTRIAL EDUCATION

THE SPIRIT OF YOUTH AND INDUSTRY¹

As it is possible to establish a connection between the lack of public recreation and the vicious excitements and trivial amusements which become their substitutes, so it may be illuminating to trace the connection between the monotony and dullness of factory work and the petty immoralities which are often the youth's protest against them.

There are many city neighborhoods in which practically every young person who has attained the age of fourteen years enters a factory. When the work itself offers nothing of interest, and when no public provision is made for recreation, the situation becomes almost insupportable to the youth whose ancestors have been rough-working and hard-playing peasants.

In such neighborhoods the joy of youth is well nigh extinguished; and in that long procession of factory workers, each morning and evening, the young walk almost as wearily and listlessly as the old. Young people working in modern factories situated in cities still dominated by the ideals of Puritanism face a combination which tends almost irresistibly to overwhelm the spirit of youth. When the Puritan repression of pleasure was in the ascendant in America the people it dealt with lived on farms and villages where, although youthful pleasures might be frowned upon and crushed out, the young people still had a chance to find self-expression in their work. Plowing the field and spinning the flax could be carried on with a certain joyousness and vigor which the organization of modern industry too often precludes. Present industry based upon the inventions of the nineteenth century has little connection with the old patterns in which men have worked for generations. The modern factory calls for an expenditure of nervous energy almost more than it demands muscular effort, or at least machinery so far performs

¹ From "Spirit of Youth and the City Streets," Chapter V., by Jane Addams. Copyright 1909 by The Macmillan Co. Reprinted with the kind permission of the publishers.

the work of the massive muscles, that greater stress is laid upon fine and exact movements necessarily involving nervous strain. But these movements are exactly of the type to which the muscles of a growing boy least readily respond, quite as the admonition to be accurate and faithful is that which appeals the least to his big primitive emotions. The demands made upon his eyes are complicated and trivial, the use of his muscles is fussy and monotonous, the relation between cause and effect is remote and obscure. Apparently no one is concerned as to what may be done to aid him in this process and to relieve it of its dullness and difficulty, to mitigate its strain and harshness.

Perhaps never before have young people been expected to work from motives so detached from direct emotional incentive. Never has the age of marriage been so long delayed; never has the work of youth been so separated from the family life and the public opinion of the community. Education alone can repair these losses. It alone has the power of organizing a child's activities with some reference to the life he will later lead and of giving him a clue as to what to select and what to eliminate when he comes into contact with contemporary social and industrial conditions. And until educators take hold of the situation, the rest of the community is powerless.

In vast regions of the city which are completely dominated by the factory, it is as if the development of industry had out-run all the educational and social arrangements.

The revolt of youth against uniformity and the necessity of following careful directions laid down by some one else, many times results in such nervous irritability that the youth, in spite of all sorts of prudential reasons, "throws up his job," if only to get outside the factory walls into the freer street, just as the narrowness of the school inclosure induces many a boy to jump the fence.

When the boy is on the street, however, and is "standing around on the corner" with the gang to which he mysteriously attaches himself, he finds the difficulties of direct untrammelled action almost as great there as they were in the factory, but for an entirely different set of reasons. The necessity so strongly felt in the factory for an outlet to his sudden and furious bursts of energy, his overmastering desire to prove that he could do things "without being bossed all the time," finds little chance for expression, for he discovers that in whatever really active pursuit he tries to engage, he is promptly suppressed by the police.

After several futile attempts at self-expression, he returns to his street corner subdued and so far discouraged that when he has the next impulse to vigorous action he concludes that it is of no use, and sullenly settles back into inactivity. He thus learns to persuade himself that it is better to do nothing, or, as the psychologist would say, "to inhibit his motor impulses."

When the same boy, as an adult workman, finds himself confronted with an unusual or an untoward condition in his work, he will fall back into this habit of inhibition, of making no effort toward independent action. When "slack times" comes, he will be the workman of least value, and the first to be dismissed, calmly accepting his position in the ranks of the unemployed because it will not be so unlike the many hours of idleness and vacuity to which he was accustomed as a boy. No help having been extended him in the moment of his first irritable revolt against industry, his whole life has been given a twist toward idleness and futility. He has not had the chance of recovery which the school system gives a like rebellious boy in a truant school.

The unjustifiable lack of educational supervision during the first years of factory work makes it quite impossible for the modern educator to offer any real assistance to young people during that trying transitional period between school and industry. The young people themselves who fail to conform can do little but rebel against the entire situation, and the expressions of revolt roughly divide themselves into three classes. The first, resulting in idleness, may be illustrated from many a sad story of a boy or girl who has spent in the first spurt of premature and uninteresting work, all the energy which should have carried them through years of steady endeavor.

This revolt against factory monotony is sometimes closely allied to that "moral fatigue" which results from assuming responsibility prematurely.

The second line of revolt manifests itself in an attempt to make up for the monotony of the work by a constant change from one occupation to another. This is an almost universal experience among thousands of young people in their first impact with the industrial world.

The startling results of the investigation undertaken in Massachusetts by the Douglas Commission showed how casual and demoralizing the first few years of factory life become to thousands of unprepared boys and girls; in their first restlessness and

maladjustment they change from one factory to another, working only for a few weeks or months in each, and they exhibit no interest in any of them save for the amount of wages paid. At the end of their second year of employment many of them are less capable than when they left school and are actually receiving less wages. The report of the commission made clear that while the two years between fourteen and sixteen were most valuable for educational purposes, they were almost useless for industrial purposes, that no trade would receive as an apprentice a boy under sixteen, that no industry requiring skill and workmanship could utilize these untrained children and that they not only demoralized themselves, but in a sense industry itself.

An investigation of one thousand tenement children in New York who had taken out their "working papers" at the age of fourteen, reported that during the first working year a third of them had averaged six places each. These reports but confirm the experience of those of us who live in an industrial neighborhood and who continually see these restless young workers, in fact there are moments when this constant changing seems to be all that saves them from the fate of those other children who hold on to a monotonous task so long that they finally incapacitate themselves for all work. It often seems to me an expression of the instinct of self-preservation, as in the case of a young Swedish boy who during a period of two years abandoned one piece of factory work after another, saying "he could not stand it," until in the chagrin following the loss of his ninth place he announced his intention of leaving the city and allowing his mother and little sisters to shift for themselves. At this critical juncture a place was found for him as lineman in a telephone company; climbing telephone poles and handling wires apparently supplied him with the elements of outdoor activity and danger which was necessary to hold his interest, and he became the steady support of his family.

But while we know the discouraging effect of idleness upon the boy who has thrown up his job and refuses to work again, and we also know the restlessness and lack of discipline resulting from the constant change from one factory to another, there is still a third manifestation of maladjustment of which one's memory and the Juvenile Court records unfortunately furnish many examples. The spirit of revolt in these cases has led to distinct disaster.

Knowing as educators do that thousands of the city youth will enter factory life at an age as early as the state law will permit; instructed as the modern teacher is as to youth's requirements for a normal mental and muscular development, it is hard to understand the apathy in regard to youth's inevitable experience in modern industry. Are the educators, like the rest of us, so caught in admiration of the astonishing achievements of modern industry that they forget the children themselves?

A Scotch educator who recently visited America considered it very strange that with a remarkable industrial development all about us, affording such amazing educational opportunities, our schools should continually cling to a past which did not fit the American temperament, was not adapted to our needs, and made no vigorous pull upon our faculties. He concluded that our educators, overwhelmed by the size and vigor of American industry, were too timid to seize upon the industrial situation and to extract its enormous educational value. He lamented that this lack of courage and initiative failed not only to fit the child for an intelligent and conscious participation in industrial life, but that it was reflected in the industrial development itself; that industry had fallen back into old habits, and repeated traditional mistakes until American cities exhibited stupendous extensions of the medievalisms in the traditional Ghetto, and of the hideousness in the Black Country of Lancashire.

He contended that this condition is the inevitable result of separating education from contemporary life. Education becomes unreal and far fetched, while industry becomes ruthless and materialistic. In spite of the severity of the indictment, one much more severe and well deserved might have been brought against us. He might have accused us not only of wasting, but of misusing and of trampling under foot the first tender instincts and impulses which are the source of all charm and beauty and art, because we fail to realize that by premature factory work, for which the youth is unprepared, society perpetually extinguishes that variety and promise, that bloom of life, which is the unique possession of the young. He might have told us that our cities would continue to be traditionally cramped and dreary until we comprehend that youth alone has the power to bring to reality the vision of the "Coming City of Mankind, full of life, full of the spirit of creation."

A few educational experiments are carried on in Cincinnati,

in Boston and in Chicago, in which the leaders of education and industry unite in a common aim and purpose. A few more are carried on by trade unionists, who in at least two of the trades are anxious to give to their apprentices and journeymen the wider culture afforded by the "capitalistic trade schools" which they suspect of preparing strike-breakers; still a few other schools have been founded by public spirited citizens to whom the situation has become unendurable, and one or two more such experiments are attached to the public school system itself. All of these schools are still blundering in method and unsatisfactory in their results, but a certain trade school for girls, in New York, which is preparing young girls of fourteen for the sewing trade, already so overcrowded and subdivided that there remains very little education for the worker, is conquering this difficult industrial situation by equipping each apprentice with "the informing mind." If a child goes into a sewing factory with a knowledge of the work she is doing in relation to the finished product; if she is informed concerning the material she is manipulating and the processes to which it is subjected; if she understands the design she is elaborating in its historic relation to art and decoration, her daily life is lifted from drudgery to one of self-conscious activity, and her pleasure and intelligence is registered in her product.

I remember a little colored girl in this New York school who was drawing for the pattern she was about to embroider, a carefully elaborated acanthus leaf. Upon my inquiry as to the design, she replied: "It is what the Egyptians used to put on everything, because they saw it so much growing in the Nile; and then the Greeks copied it, and sometimes you can find it now on the buildings downtown." She added shyly: "Of course, I like it awfully well because it was first used by people living in Africa where the colored folks come from." Such a reasonable interest in work not only reacts upon the worker, but is, of course, registered in the product itself.

If educators could go upon a voyage of discovery into that army of boys and girls who enter industry each year, what values might they not discover; what treasures might they not conserve and develop if they would direct the play instinct into the art impulse and utilize that power of variation which industry so sadly needs. No force will be sufficiently powerful and widespread to redeem industry from its mechanism and materialism save the freed power in every single individual.

In order to do this, however, we must go back a little over the educational road to a training of the child's imagination, as well as to his careful equipment with a technique. A little child makes a very tottering house of cardboard and calls it a castle. The important feature there lies in the fact that he has expressed a castle, and it is not for his teacher to draw undue attention to the fact that the corners are not well put together, but rather to listen to and to direct the story which centers about this effort at creative expression. A little later, however, it is clearly the business of the teacher to call attention to the quality of the dovetailing in which the boy at the manual training bench is engaged, for there is no value in dovetailing a box unless it is accurately done. At one point the child's imagination is to be emphasized, and at another point his technique is important—and he will need both in the industrial life ahead of him.

There is no doubt that there is a third period, when the boy is not interested in the making of a castle, or a box, or anything else; unless it appears to him to bear a direct relation to the future; unless it has something to do with earning a living. At this later moment he is chiefly anxious to play the part of a man and to take his place in the world. The fact that a boy at fourteen wants to go out and make his living makes that the moment when he should be educated with reference to that interest, and the records of many high schools show that if he is not thus educated, he bluntly refuses to be educated at all. The forces pulling him to "work" are not only the overmastering desire to earn money and be a man, but, if the family purse is small and empty, include also his family loyalty and affection, and over against them, we at present place nothing but a vague belief on the part of his family and himself that education is a desirable thing and may eventually help him "on in the world." It is of course difficult to adapt education to this need; it means that education must be planned so seriously and definitely for those two years between fourteen and sixteen that it will be actual trade training so far as it goes, with attention given to the condition under which the money will be actually paid for industrial skill; but at the same time, that the implications, the connections, the relations to the industrial world, will be made clear. A man who makes, year after year, but one small wheel in a modern watch factory, may, if his education has properly prepared him, have a fuller life than did the old watch-maker who made a watch from beginning to end. It takes thirty-nine people to make a coat in a

modern tailoring establishment, yet those same thirty-nine people might produce a coat in a spirit of "team work" which would make the entire process as much more exhilarating than the work of the old solitary tailor, as playing in a baseball nine gives more pleasure to a boy than that afforded by a solitary game of hand ball on the side of the barn. But it is quite impossible to imagine a successful game of baseball in which each player should be drilled only in his own part, and should know nothing of the relation of that part to the whole game. In order to make the watch wheel, or the coat collar interesting, they must be connected with the entire product—must include fellowship as well as the pleasures arising from skilled workmanship and a cultivated imagination.

When all the young people working in factories shall come to use their faculties intelligently, and as a matter of course to be interested in what they do, then our manufactured products may at last meet the demands of a cultivated nation, because they will be produced by cultivated workmen. The machine will not be abandoned by any means, but will be subordinated to the intelligence of the man who manipulates it, and will be used as a tool. It may come about in time that an educated public will become inexpressibly bored by manufactured objects which reflect absolutely nothing of the minds of men who made them, that they may come to dislike an object made by twelve unrelated men, even as we do not care for a picture which has been painted by a dozen different men, not because we have enunciated a theory in regard to it, but because such a picture loses all its significance and has no meaning or message. We need to apply the same principle but very little further until we shall refuse to be surrounded by manufactured objects which do not represent some gleam of intelligence on the part of the producer. Hundreds of people have already taken that step so far as all decoration and ornament are concerned, and it would require but one short step more. In the meantime we are surrounded by stupid articles which give us no pleasure, and the young people producing them are driven into all sorts of expedients in order to escape work which has been made impossible because all human interest has been extracted from it. That this is not mere theory may be demonstrated by the facts that many times the young people may be spared the disastrous effects of this third revolt against the monotony of industry if work can be found for them in a place

where the daily round is less grinding and presents more variety. Fortunately, in every city there are places outside of factories where occupation of a more normal type of labor may be secured, and often a restless boy can be tided over this period if he is put into one of these occupations. The experience in every boys' club can furnish illustrations of this.

A factory boy who had been brought into the Juvenile Court many times because of his persistent habit of borrowing the vehicles of physicians as they stood in front of houses of patients, always meaning to "get back before the doctor came out," led a contented and orderly life after a place had been found for him as a stable boy in a large livery establishment where his love for horses could be legitimately gratified.

America perhaps more than any other country in the world can demonstrate what applied science has accomplished for industry; it has not only made possible the utilization of all sorts of unpromising raw material, but it has tremendously increased the invention and elaboration of machinery. The time must come, however, if indeed the moment has not already arrived, when applied science will have done all that it can for the development of machinery. It may be that machines cannot be speeded up any further without putting unwarranted strain upon the nervous system of the worker; it may be that further elaboration will so sacrifice the workman who feeds the machine that industrial advance will lie not in the direction of improvement in machinery, but in the recovery and education of the workman. This refusal to apply "the art of life" to industry continually drives out of it many promising young people. Some of them, impelled by a creative impulse which will not be denied, avoid industry altogether and demand that their ambitious parents give them lessons in "china painting" and "art work", which clutters the overcrowded parlor of the more prosperous workingman's home with useless decorated plates, and handpainted "drapes," whereas the plates upon the table and the rugs upon the floor used daily by thousands of weary housewives are totally untouched by the beauty and variety which this ill-directed art instinct might have given them had it been incorporated into industry.

Educators are thus gradually developing the courage and initiative to conserve for industry the young worker himself so that his mind, his power of variation his art instinct, his intelligent skill, may ultimately be reflected in the industrial product.

That would imply that industry must be seized upon and conquered by those educators, who now either avoid it altogether by taking refuge in the caves of classic learning or beg the question by teaching the tool industry advocated by Ruskin and Morris in their first reaction against the present industrial system. It would mean that educators must bring industry into "the kingdom of the mind"; and pervade it with the human spirit.

The discovery of the labor power of youth was to our age like the discovery of a new natural resource, although it was merely incidental to the invention of modern machinery and the consequent subdivision of labor. In utilizing it thus ruthlessly we are not only in danger of quenching the divine fire of youth, but we are imperiling industry itself when we venture to ignore these very sources of beauty, of variety and of suggestion.

THE DANGER OF UNSKILL¹

Two human streams pour ceaselessly into the sea of American industry. One of these brings to us the immigrant, the man of foreign stock, alien in blood and customs, and more and more from the backward and "beaten" peoples of eastern Europe. The sources of the other stream are in our own life, and upon it are borne America's own children who, in the passing of years, are to face the duties of manhood and womanhood. These two streams fill the vast national reservoir of labor upon which depends in large measure the future of American industry and American moral welfare. This is the first fact to which attention is directed.

The second fact is the changing character of industry, aside from its human element. We are in the midst of the great mechanical revolution whose beginning in America goes back to the early years of the nineteenth century, but which since the civil war has been uprooting the old order, supplanting its simpler methods with marvelous rapidity and tremendous power.

The human consequence of this revolution is the driving out of the man by the machine, on the one hand, and the increasing specialization of labor on the other. And the labor supplanted by the machine, if it is to fit into the resulting more specialized

¹ By Walter G. Beach. *Popular Science Monthly*. 37:178-86. August, 1910.

employments, must have skill. Primitive man was unspecialized and his skill was of the slightest, his knowledge being insignificant. The man of to-day finds that sheer muscle is at a discount, and his weaker but better trained fellow passes him in the race. It is not meant that there is not a great demand for unskilled labor, but the unskilled laborer works under a constantly growing handicap.

In our earlier national history, it was possible for us to rely for prosperity upon the resources of nature. Force of body and character sufficient to brave the hardships of a raw and untrained world, and to pluck from nature the bounties which she furnished in abundance, was the quality most essential. Each man or family was a unit in production; cooperation or combination on any extended scale involving training, was not found or needed. Individualism and the overthrow of nature, and her exploitation, were the important features of our national life which assured success; and it was just these qualities of endurance, courage force, assertiveness, aided by sheer muscle, which the selective process of our early immigration brought to us. Only men and women of such qualities could and would face the long and dreary sea voyage and brave the peril of the unknown new world. Only the man of hope, of ambition, poor in the wealth of the world, but rich in determination, force and foresight, was suited for such migration. So too, it often was the leader of the advance movement of civilization in Europe who, because of political oppression, led a vanguard of the best blood of his country to share the bounties of nature in America.

But the day in which we can rely for prosperity upon nature's bounty is past. Her resources have been explored and divided up. And while new resources continue to be brought to light, they are the possession of the few, and offer little of hope to the hungry immigrant from the old world.

We can not, therefore depend exclusively upon nature and the raw force and determination of our people to maintain or continue the oldtime progress and high position of America. More and more our dependence must be placed upon ourselves rather than upon nature alone, and in particular upon a character acquired through training. The new industrial life, it has been said, demands skill. If America is to advance in industry, she must face this demand; her people must be trained and trained industrially.

If such is a true statement of the general character of the productive process of to-day, it is pertinent to inquire if the two streams of humanity, which furnished the labor necessary to production, are fitted to the more specialized demands of this process. Is our labor skilled? And what are its means of attaining skill?

Let us consider first the stream of immigration. The report of the commissioner general of immigration for 1907 shows that out of the total number of 1,285,000 coming to this country from other parts of the world in the year 1906, about eighty-three per cent were without skill requisite to enter a skilled industry. If we eliminate from this number the women, children, aged and such other persons as are described as having no occupation at all, there remains fifty-nine per cent of the total who are of industrial age and sex and yet are distinctly unskilled laborers. A large number, too, of those excluded are women who will enter unskilled trades, and many are children who will begin to earn at the earliest possible time in unskilled employments.

The fact that such a large proportion of the immigrant population is unskilled is inevitable. It is necessary only to recall that the great influx of the present and recent past is from central and southern Europe, from regions in which the opportunity to acquire skill is comparatively slight, and where the call for skill is not yet dominant.

If it be agreed, then, that the stream of immigration is pouring a mass of unskilled labor into our country, consider what is the case in regard to the second source of our industrial life. What is the tendency to skill and the opportunity to acquire it among our own children who must soon enter industry? It is impossible to state this problem in a statistical fashion; but a fair idea may be obtained from a study of the industrial situation. Skill may be gained through two, and only two, methods. It must come either in connection with industry itself or in some way of preparation outside it; either through a system of apprenticeship or by way of vocational schools or school studies. In the older state of industry, the apprentice system of the guilds constituted a logical and efficient method of training. Boys became skilled workers under direction of a master and in the actual work of production. The apprentice system was the great industrial school of the past, and not only because it led to industrial skill, but also because it gave at least something of that mental discipline and power which we associate with the idea of a school.

This system, as is well known, is largely a thing of the past. It is true that apprentices are now received in some industrial plants, but the number so received is entirely inadequate to furnish a supply of skilled labor for the many lines of trade and industry. It is enough to say that the modern factory with its great specialization, is not as a rule, willing to train its skilled workers. It wishes its workers to come to it already skilled.

If training can not be gained as a part of the actual productive process, may it be acquired outside that process? Or, to state it differently, does our school system give the members of the growing generation a training which fits them to enter the industrial life as skilled workers?

We have in this country a considerable and growing number of trade schools and technical schools. We also find evening schools where vocational training may be obtained; and there are other opportunities of a similar sort. But it is not necessary to prove that there is but a scant beginning in this direction, as this is admitted by all students of the subject. It is clear that our present means of training for trade and industry through special schools is entirely inadequate, and it is equally well admitted that our common school system does not meet the need in this direction. Its curriculum has been determined by other interests than the economic needs of a constantly increasing industrial population.

In the excellent study by Professor Thorndike,¹ based upon returns from schools of twenty-three cities having a population of 25,000 or more, it is demonstrated beyond a doubt that the lack of opportunity for vocational training is a great cause of that heavy dropping out of school in early grades which thereby closes school education to a large portion of our children. Dr. Thorndike finds that only twenty-seven per cent of those entering the first grade of the common school continue into the first year of the high school; and of these, thirty-seven per cent drop out by the end of the first high-school year. The main cause of this enormous elimination from the high school has to do with the nature of the high-school course of study. Evidently a considerable number begin the high school at the age of fourteen or fifteen, an age at which little skill has been gained, yet which is favorable to its acquisition, but are discouraged by the lack of opportunity in this direction and so leave school altogether.²

¹ "The Elimination of Pupils from School," p. 118 ff.

² See Ayres, "Laggards in our schools" for different percentages.—E. R.

As is well known, it was found by the Massachusetts Commission on Industrial and Technical Education that "25,000 children between fourteen and sixteen years of age are at work or idle," that is, not in school; and the result of this careful investigation was to make entirely certain that these children had dropped out of school because they did not find there any possibility for training along lines which would prepare for the making of a livelihood.

We must conclude, therefore, that neither within the organization of industry itself, nor outside of it, in schools of any type, is there opportunity for the stream of growing boys and girls to gain in an economic manner that degree of vocational training which the conditions of modern industry demand.

What then is the situation which we face? First, the demand of our specialized commercial and industrial life for a larger and larger percentage of skilled workers. Secondly, a stream of foreign immigration pouring upon our shores an unskilled population much of which could not acquire skill readily, even if opportunity were presented, and which must inevitably supply largely the demand for unskilled labor. Third, a stream of growing boys and girls who must earn their living through our present complex and specialized forms of industry. Fourth, a comparatively slight chance of their gaining skill after they enter the industrial life, and no adequate opportunity to gain skill through the school before entering upon this work. What is the result? A demand for trained men and women, on the one hand, and on the other a vain beating against the bars which defend the skilled positions, by a mass of desponding, dissatisfied unskilled workers, with only the most venturesome and aggressive pushing through into skilled positions in a manner harmful and exhausting to themselves and weakening to the nation.

It is at this point that the real menace of unskill becomes clear. Much has been written and spoken about the retarding effect of unskill upon our national production, and this is indeed serious. But the real danger is more fundamental. Of greater importance than the product of labor is the worker himself. The effect upon our people of such a situation as has been described, is the real danger. The problem is not primarily industrial but social. Unskill in the face of a demand for skill leads to degeneracy. In this fact lies its greatest menace. In his admirable study of "Misery and its Causes," Dr. Devine wisely suggests that

the great cause of misery is maladjustment, and there is strong reason to think that his conclusion is correct. But just in so far as it is true that economic facts lie back of and condition the progress of civilization, to that extent failure to meet the fundamental economic facts involved in advancing stages of industry must constitute or lead to the greatest social maladjustment and consequent degradation and misery. It is maladjustment in respect to the most vital phase of life.

A great proportion of the young people of our country must enter an industrial calling. In what way does this unfitness for it affect their lives? The result is best shown by the often-quoted finding of the Massachusetts Commission on Industrial and Technical Education, for 1906. Out of 25,000 young people of from fourteen to sixteen years of age in that state not in school, it is reported that thirty-three per cent were in absolutely unskilled trades and sixty-four per cent in what are called low-grade industries, where the skill of the workers is very slight. Only less than two per cent had found their way into really skilled industries. What does it mean, humanly speaking, to have a child employed in an unskilled industry? Simply that the child usually has come to the end of its development. On the side of industry it means a permanently small production and low earning power; on the side of the individual life, it means a stagnant mind and the consequences which flow from it. For it is not true that children remain in these low-grade occupations for a brief time, and from them pass to higher and more skilled employment. The nature of industrial and commercial technic is such that there is a chasm between unskilled and skilled employments. There is no passage from one to the other. The elevator boy or messenger boy is not being trained to be a mechanic or a telegrapher or any other more or less skilled worker. These and other low-paid juvenile employments represent a class of work of a special sort from which there is no exit and which rather unfit than fit one for better work. In the street trades, in candy-making, in cotton, woolen, knitting and other mill work, and in many other places such work is found. To a considerable extent it is work which should be done by machines and not by growing boys and girls. The child who leaves school to enter one of these positions, condemns himself in the majority of cases to an unskilled life. He passes from one unskilled position to another, becoming more and more discontented as he finds it impossible to advance in

wages and responsibility. Discontent, hopelessness, shiftlessness, take the place of ambition and progressive force. The unskilled employment is not disciplinary and it does not lead to a skilled employment which is disciplinary. In the organization of industry, the avoidance of waste is a great aim; yet the lessening of the greatest of all wastes—the waste of life—receives scanty attention.

The writer of "The Long Day,"³ in drawing upon her own experience as an unskilled girl, looking for employment in a great city, summarizes the situation in these words:

For sad and terrible though it be, the truth is that the majority of "unfortunates," whether of the specifically criminal or of the prostitute class, are what they are, not because they are inherently vicious, but because they were failures as workers and wage earners. They were failures as such, primarily, for no other reason than that they did not like to work. And they did not like to work, not because they are lazy—they are anything but lazy—but because they did not know how to work.

And again the same writer records her conclusions in regard to the educational need of girls in view of the modern demand for skill:

And there are other things more important than the "three R's" which she should be taught. She should be taught how to work—how to work intelligently. She should be trained young in the fundamental race activities, in the natural human instincts for making something with the hands or of doing something with the hands, and of taking infinite pleasure in making it perfect, in doing it well.⁴

And it may be added that what is true of girls is equally true of boys. The great cause of failure and resulting degeneracy is lack of training.

It must be recognized that the vocational impulse is deep-seated, and as the child advances into youth he begins to look to the doing of his life's work. He is restless with simply academic subjects, however valuable. He is concrete in his demands. He wishes to do and earn. But it is an interest in the deep human instincts and forces which must be laid hold of, if we are to develop a healthy, hopeful life; and among these we must recognize the economic instinct leading to the desire to earn and to make a place in the world of production. How much of progress flowed from the development resulting from the voca-

³ Page 277.

⁴ Page 294.

tional education of the apprentice of the guild organization, it is not possible to say; but it certainly was a factor of no small import. And the close association of the wonderful expression of artistic genius in Italy with the development of the skilled artisan and craftsman, is a feature of social history which should lead to serious reflection.

But, further, lack of skill means insecurity of employment for adult workers; and no greater danger threatens labor than this. Every slackening of trade, every depression of business, every interference with industrial progress, every mistake of judgment of the organizers of industry, falls with heaviest force upon the unskilled. Their value in industry is least, their tenure of employment is most easily imperilled. The past two winters with armies of unemployed in every large city, recruited largely, we are told by competent observers, from the unskilled, bear witness to this fact.

A consequence of economic insecurity is a weakening of moral tone and grip; this is the greatest of all dangers to society. "Every great industrial crisis leaves behind it," says Dr. Warner, "a legacy of individual degeneracy and personal unthrift." "Involuntary idleness intensifies and perpetuates incapacity." Nothing so begets failure as the consciousness of failure. The discipline of regular and continuous occupation is a support which few can do without. At the recent meeting of the British Association for the Advancement of Science, a member of the Royal Commission on the Poor Laws held that pauperism arises mainly from the casual worker class, that is, in the main, the unskilled class whose security of employment is slightest and whose mental attitude is therefore least hopeful and healthy. To live on the edge of social existence blinds the eyes to the social order which is not near the edge. Hopefulness of mind is a social force impossible to measure. It is hope which marks the difference between slavery and freedom, between stagnation and progress. But insecurity weakens and destroys hope, and if employment continues to be insecure, the result must be an increasing body of hopeless men and women, feeding, inevitably, the ranks of criminal and pauper degeneracy.

Viewed from this point, the significance of unskill becomes tremendous. Lack of skill stands as the bar to mental progress even in an unskilled age; but in an age demanding skill, the lack of it is itself a condition leading to degeneration. Through

⁵ A. G. Warner, "American Charities," pp. 103 and 97.

unskill, labor is condemned to low wages, a narrow outlook, an inability to meet the modern demands of industry; by remaining economically unfit, men become socially unfit and are forced for themselves and their children into the ceaseless round of struggle for bare subsistence, with consequent hopelessness, bodily decay and resultant misery. It should be clear that in refusing to meet the industrial needs of our age for skilled workers the nation is condemning a considerable part of its population to an inevitable economic unfitness and resultant mental sterility, since economic well-being is essential to mental stability and progress. Degeneracy, thus, is born of the unskilled hand and the untrained mind.

There is one further position which needs to be considered. It is becoming clear, as investigation into social life proceeds, that human progress depends largely upon society's creative minds, its "inventors," its originators, whose fertile ideas are passed on to the mind of the mass of mankind. It is these suggestive and fruitful ideas which mark the stages of advancement and which constitute the essence of civilization.

And it may be said, further, to be a matter of at least large probability that these creative minds may be brought forth in any stratum of society. Whether they shall develop and give to civilization the benefit of their talent, depends upon the conditions surrounding them. They may grow and become mentally fruitful, or be repressed and become sterile, according as social environment is favorable or the contrary. It would seem that society should make every effort in its own interest, to encourage their nurture and preservation. But, as Dr. Ward has so well shown,⁶ education is the greatest social agency for providing that the mind, strong by nature, shall develop and give its ideas to the world. How great therefore is the urgency that society should afford educational opportunity to all classes of its people. How great a part of the possible progress of the race or nation is hindered by the social waste of its creative ability which never arrives at its period of fertile productiveness for lack of suitable social opportunity.

It should, however, be clear from what has already been said that the only education which can reach the masses of a nation and hold them long enough to be of educational service to them,

⁶ "Applied Sociology," chapter X.

is that which looks toward vocation. And it therefore follows that only by making our school system, to some degree, industrial and vocational, and thereby holding our children under educational influences for a longer period, can the great number of productive minds, born in poverty or other unfavorable conditions, be preserved and brought to that stage of development in which they may advance the nation.

Here, then, is the real danger of unskill. Modern industry calls for skill. In the fact of this demand, lack of skill leads to unemployment and so to social weakness. Lack of skill leads, also, to poor employment; and so likewise, carries men into shiftlessness, discontent and degeneration. On the other hand, skill breeds hope and hence mental development. It opens new avenues of activity and draws out otherwise buried talent, and thus preserves the originators to the race. But our two streams of labor are inadequately trained for the economic demand. What we should do in regard to the stream of immigrants is a problem by itself. But as for our own children, the demand for opportunity to gain that skill, which will enable them to fit the economic life of to-day, is a very urgent and vital one.

NEED OF AN INDUSTRIAL EDUCATION IN AN INDUSTRIAL DEMOCRACY¹

The need for industrial education may be approached from many standpoints. Industrial education may be treated as an indispensable factor in material prosperity, or as a factor in promoting the ability of a nation in the competitive race for commercial supremacy among nations—a point of view from which the example of Germany is urged. Or it may be regarded from the standpoint of its effect upon the contentment of the workers, or as a means of providing a more stable and efficient set of employes, and reducing the waste now found in most manufacturing enterprises. All of these things have their importance. But they all look at education as an instrument for external

¹By John Dewey. *Manual Training and Vocational Education*. 17:409-14. February, 1916.

ends, and they pass lightly over that part of the subject represented in our title by the words, "education in an industrial democracy." The standpoint from which we are to approach the matter is, in short, that of the demands laid upon education by the need of fostering democracy in a country largely industrial, and where the need of making the spirit of democracy permeate industry is recognized.

Hence, a few words about democracy itself seem to be called for. Democracy has its political aspect. Probably this is the first aspect to present itself to view. Politically, democracy means a form of government which does not esteem the well-being of one individual or class above that of another; a system of laws and administrations which ranks the happiness and interests of all as upon the same plane, and before whose law and administration all individuals are alike, or equal. But experience has shown that such a state of affairs is not realizable save where all interests have an opportunity to be heard, to make themselves felt, to take a hand in shaping policies. Consequently, universal suffrage, direct participation in choice of rulers, is an essential part of political democracy.

But political democracy is not the whole of democracy. On the contrary, experience has proved that it cannot stand in isolation. It can be effectively maintained only where democracy is social—where, if you please, it is moral. A social democracy signifies, most obviously, a state of social life where there is wide and varied distribution of opportunities; where there is much social mobility or scope for change of position and station; where there is free circulation of experiences and ideas, making possible a wide recognition of common interests and purposes, and where there is such an obvious utility of the social and political organization to its members as to enlist their warm and steady support in its behalf. Without ease in change, society gets stratified into classes, and these classes prevent anything like fair and even distribution of opportunity for all. The stratified classes become fossilized, and a federal society comes into existence. Accident, rather than capacity and training, determine career, reward, and repute. Since democracies forbid, by their very nature, highly centralized governments working by coercion, they depend upon shared interests and experiences for their unity and upon personal appreciation of the value of institutions for stability and defense.

Such qualities as these, such qualities as insistence upon widespread opportunity, free exchange of ideas and experiences, extensive realization of the purposes which hold men together, are intellectual and emotional. The importance of such qualities is the reason why we ventured to call a social democracy a moral democracy. And they are traits which do not grow spontaneously on bushes. They have to be planted and nurtured. They are dependent upon education. It is no accident that all democracies have put a high estimate upon education; that schooling has been their first care and enduring charge. Only through education can equality of opportunity be anything more than a phrase. Accidental inequalities of birth, wealth, and learning are always tending to restrict the opportunities of some as compared with those of others. Only free and continued education can counteract those forces which are always at work to restore, in however changed a form, feudal oligarchy. Democracy has to be born anew every generation, and education is its midwife. Moreover, it is only education which can guarantee widespread community of interest and aim. In a complex society, ability to understand and sympathize with the operations and lot of others is a condition of common purpose which only education can procure. The external differences of pursuit and experience are so very great, in our complicated industrial education, that men will not see across and thru the walls which separate them, unless they have been trained to do so. And without this lively and ardent sense of common life, it is hopeless to secure in individuals that loyalty to the organized group which needs to be an animating motive of conduct.

To recall these generalities, these commonplaces, would be idle were it not that there is a tendency to drop them from view when the topic of industrial education is under consideration. Its purpose is often that to be so much narrower, more practical and technical, than the object of other established modes of education, that these features may be—nay, must be—left out of account. But the contrary is the case. Just because of the part played by industry in modern life, an education which has to do with preparation for it, must bear these considerations in mind more than other forms, if democracy is to remain an actuality. Just these things provide the controlling considerations for deciding the curriculums, methods, and administration of a system of industrial education.

There are many phases of industry, as at present carried on, which are unfavorable to a genuine democracy, just as, on the other hand, the development of modern industrial and commercial methods has been a chief factor in calling political democracy into existence and then endowing it with social aspirations. There are extreme divisions of work between the skilled and unskilled, and also between the most skilled workers on the technical side, whether inventors or doers, and the managers on the fiscal and marketing side. These tend to segregate men and women into exclusive classes. The difference on the side of consumption between those who can barely maintain a low standard of living and those who are relieved by circumstances from any responsible thot for expenditure, and who give themselves up to display and idleness, has never been as large or as overtly conspicuous as it is today. Older divisions of master and subject class tend to reinstate themselves in a subtle form.

Machine industry, moreover, tends to reduce great masses of men to a level where their own work becomes mechanical and servile. Work loses its intellectual and esthetic cast and becomes a mere necessity to procure the pay which buys daily support. The machine operator engaged in manipulation of a machine becomes identified with the monotonous movements of the monster he tends. As long as he has to do new things, he learns. The moment he has mastered his unchanging work it masters him; its habits absorb and swallow his. Employers whose methods have bred lack of initiative, and have practically forbidden workers to think, complain because men can not be found for places of greater responsibility. But the evils are far from being confined to the laboring class. When social responsibilities have at most to do with the expenditure of wealth, not with earning it, when business is pursued not as an exercise in social cooperation but as a means of power, the mind is so hardened and restricted that democracy becomes a mere name.

To recall such danger is to recognize some of the offices thrust upon industrial education in a democracy. To counteract the soulless monotony of machine industry, a premium must be put upon initiative, intellectual independence, and inventiveness. Hence schooling must not model itself upon the automatic repetitiousness of machines, whether in the name of the false gods of practical skill or discipline. Personal control of power, strong discontent with whatever subordinates mental capacity

to merely external regulation, must be made primary. The imagination must be so stored that in the inevitable monotonous stretches of work, it may have worthy material of art and literature and science upon which to feed, instead of being frittered away upon undisciplined dreamings and sensual fancies. New inventions and applications of science are actively remaking technical and technological methods of industry. Hence the desire for immediate results and immediate efficiency must be held in check by the need of securing powers which will enable individuals to adapt themselves to inevitable change. Otherwise they will become helpless burdens on society as the methods in which they have been trained pass away. Moreover, since the worker is to be an integral part of a self-managing society, pains must be taken at every turn to see that instead of being prepared for a special, exclusive, practical service, as a hide might be prepared for a shoemaker, he is educated into ability to recognize and apply his own abilities, is given self-command, intellectual as well as moral.

Let it not be thought that this is a plea for the continuation of the older so-called "general education," on the ground that it also made its defense that it trained general capacity and brought the individual to a consciousness of himself and his surroundings. The material of his traditional general education is not adapted to the needs and activities of an industrial society. It was developed (as were its methods) in times when our present industrial society was not. The simple fact is, that no attempt has ever been made to discover the factors of scientific and social importance in present-day industry and in a common democratic life, and then to utilize them for educational purposes; as was done by our spiritual progenitors in the work of selecting the factors of value in a non-industrial and feudal society so as to make them count for education. The work which has to be done by a system of industrial education in an industrial democracy is to study the most important processes of today in farming, manufacturing, and transportation to find out what are the fundamental and general elements which compose them, and thereby develop a new kind of general education on top of which the more special and technical training for distinctive vocations may be undertaken.

As a new subject-matter is needed, so are new methods. Our inherited instruction knows, in the main, two kinds of methods.

One is that of habituation in various specialized modes of skill, methods of repetition, and drill, with a view to getting automatic skill. This is the method which is most likely to be resorted to in an unintelligent industrial training. It is adapted to securing mechanical proficiency in a narrow trade, but is no more adapted to the specific needs of industrial democracy than is the other inherited method—the theoretical and scholastic method of acquiring, expounding, and interpreting *literary* materials. What is needed is a recognition of the *intellectual* value of labor—the same kind of recognition of intellectual results in facts, ideas, and methods to be got from ordinary industrial materials and processes that the laboratory (significant name) has accomplished for a limited range of materials and processes. Or, put the other way about, what is needed is a development of laboratory methods which will connect them with the ordinary industrial activities of men. In that case, there will be no danger that the necessary personal insight and initiative will not be secured.

The value of the older humanistic methods was that they had a vital relation to human affairs and interests. But that is a reason for attempting to discover the humanism contained in our existing social life, not for the reverse policy of despising the present and taking flight to the past. I do not underestimate the difficulties in the way of taking a spiritual survey of our present industrial society and applying its results to education. Strong class interests stand in its way, for it would be sure to utilize education as a means for bringing to more general recognition the evils and defects of present industrial aims and methods, and in making more wide-spread a knowledge of the means by which these evils are to be eliminated. An effective study of child labor, of the sanitary conditions under which multitudes of men and women now labor, of the methods employed in a struggle for economic supremacy, of the connections between industrial and political control, and of the methods by which such evils may best be remedied, is a need of any education which is to be a factor in bringing industrial democracy out of industrial feudalism. But to propose this is to invite the attack of those who most profit by the perpetuation of existing conditions. Yet since this knowledge is an obvious concern of the masses, and we have already a political machinery adapted for securing control of the masses, this spirit is bound in the future

to animate our educational system. In the universities, in spite of their seeming closer connection with existing economic forces, this scientific spirit has already come into education. As the merely propagandist and merely philanthropic spirit give way to a scientific spirit, it will find its way also into lower education, and finally become a part of the working mental disposition of the masses.

It hardly needs to be said, in closing, that it is a need of industrial education in an industrial democracy that its administration be kept unified with that of ordinary public education. To make it a separate system, administered by different officers having different aims and methods from those of the established public school system, is to invite the promotion of a narrow trade system which shall in effect make the pecuniary, rather than the social and democratic, factors in industry supreme. The natural counterpart to free and universal public education is a system of universal industry in which there are no idlers or shirkers or parasites, and where the ruling motive is interest in good workmanship for public ends, not exploitation of others for private ends. This is the reason why industrial democracy and industrial education should fit each other like hand and glove.

THREE STAGES IN INDUSTRIAL EDUCATION¹

Three stages in industrial education: (1) the beginning stage, (2) the finding stage, (3) the finishing stage. These are the three divisions of a comprehensive scheme of industrial training recently outlined by the committee on course of study for the Indian schools of the United States. The first stage gives elementary general education; the second continues the general education and helps a student to find a vocation suited to his taste and ability; the third fits him more specifically for that vocation. "During the first and second periods the training in domestic and industrial activities centers around the conditions essential to the improvement and proper maintenance of the

¹ Editorial Comment. *Manual Training and Vocational Education*. 17: 379-80. January, 1916.

home and farm." "In addition to the regular academic subjects boys are required to take practical courses in farming, gardening, dairying, farm blacksmithing, farm engineering, farm masonry, farm painting, and shoe and harness repairing, and all girls are required to take courses in home cooking, sewing, laundering, nursing, poultry raising and kitchen gardening." "Non-essentials are eliminated. One-half of each day is given to industrial training and the other half to academic studies. All effort is directed toward training Indian boys and girls for efficient and useful lives under the conditions which they must meet after leaving school."

WORK AS RELATED TO MODERN INDUSTRIAL CONDITIONS¹

There is an instinct for work, but basically it is the instinct for self-preservation and self-perpetuation. Work is our individual and collective struggle for existence; and, out of the mental and physical exertion of the struggle to feed, clothe, and house us, has evolved our present state of being. The whole complex machine of commerce and industry—factory, farm, railroad, bank, office, government—has been built for production, construction, distribution, and protection. The present machine is the product of slow evolution; and the effort of the centuries to build a machine which will better cope with the problem has been the primary cause of our advance in the various activities of life. Integrity, honesty, discipline, sound health, fair dealing, respect for others' rights—these have come from the courageous assumption of one's burden of work, and the opposites of these are the results of the desire to dodge the burden.

The Natural Law of Work

And so we have a natural law of work, the substance of which is this: Work and you will reach a higher mental development; cease work and you will degenerate.

¹ From "Education for Industrial Workers," by Herman Schneider. Copyright, 1915, by World Book Company, Yonkers-on-Hudson, New York.

The law can be established scientifically if need be, but it is not necessary, for in this case common observation, science, and religion all agree. Each of us knows he will deteriorate physically and mentally if he ceases constructive work, and history shows that this is also true of communities, of nations, and of civilizations. Our proverbs, sacred and secular, affirm it. The cycle of work to wealth, wealth to idleness, idleness to poverty, and poverty to work again, is an evidence of inefficiency following inaction. Mental and physical activity are mutually stimulating; thinking and doing are reciprocal aids.

Former Alliance of Mental Training and Industry

Mental training and industry have both been most stable when they have been most closely allied; and until comparatively recent years they have been one in fact. Under the old guild and apprentice systems, for example, the workers were trained so well in the commercial field that industrial education was not a special school problem. Work *was* education. To embark upon an apprenticeship was serious business; careful discussion preceded it and ample documentary agreements gave guarantees of execution. Industrial communities were small, and personal acquaintance fostered personal interest. Competition in skillful execution furnished a lively stimulus which led to the enthusiastic use of head and hand coördinately. Generation by generation there was a cumulative mental advancement coupled with refinement of manual skill in constructive work. In this manner, even long before the days of formal apprenticeship, mankind grew through work.

Changes with Introduction of Factory System

But there have been two significant changes in the conditions under which work is done.

In the first place, it is only within the past two or three generations that mankind has worked in masses within walls. For centuries mankind did self-directed work, largely in the open air. These were farmers, the seamen, and the forest rangers. As civilization grew, a constantly increasing minority did self-directed work, individually or in small groups, indoors; these were the artisans in the skilled trades, who met the demands of growing

communities. Then came the great change to the factory system through the development of power devices; this dates virtually from the invention of the steam engine.

In the second place, the industrial worker formerly knew a *whole* job, rather than a part of it; he performed a great variety of functions in the completion of his task, instead of endlessly repeating the same operation. The clockmaker made a *whole* clock, working individually, and the necessity of working out every part's relation to every other part gave the worker a mental stimulus, and, therefore, a higher mental development. The finished product was all his own; the desire for self-expression, which every man has, found an outlet through his work; and, once having served his thorough apprenticeship, he worked largely by self-direction. Under our present highly organized industrial conditions the making of a clock is subdivided into a large number of operations. Each workman in a clock factory makes piece after piece of the same kind principally by feeding material into a machine, and why he does it he need not know and usually is not told. We are putting the brains into the machine and into the management office, and making the workman a purely automatic adjunct.

Effect of Different Kinds of Work on Habit Centers and Thinking Centers

Now, we have, broadly speaking, two types of brain centers: the lower centers controlling habits, and the higher active thinking centers. If one's work is purely automatic repetition requiring no initiative, planning or diversion, the habit centers are developed and the thinking centers have at best a retarded growth.

In this connection it is necessary to differentiate between casually repeated useful habits of daily life which economize time, and constantly repeated automatic motions which constitute one's major work; the argument is fallacious that, because the former are good, so are the latter. The putting on of one's shoes is governed by one's habit centers; when we were learning to put on our shoes the thinking centers were being developed. Dressing, eating, walking, boarding a car, opening a door are time-saving actions of habit repeated at comparatively long intervals, differing widely in their motor forms, and used as incidental instruments to a larger self-directed action. There

is a vast difference between using many habits several times a day as means to self-directed ends and repeating *one* habit all day as an end in itself. The playing of scales on a piano becomes a habit to the skilled musician; he uses it as a means of performing a stimulating, energizing, thought-requiring production. It is a good and beneficial habit which facilitates and simplifies his performance. But if he learned the scales merely to repeat them ten hours a day, day after day, without meaning and without end, his work would become lethargizing and enervating.

It should be noted, too, that automaticity of itself does not impair one's thinking capacities. When we walk, our habit centers control the action; but we can walk and think at the same time. The evil of automatic machine-feeding is negative rather than positive, in that it requires no constructive exercise of the thinking centers, and hence develops only the habit centers. There are, however, certain types of automatic work which are distinctly injurious because they introduce other deteriorating factors. For example, if the work requires that the eyes be focused constantly at one place, if the motions of the machine before the eyes be a monotonous rhythmic repetition, and if the motions of the hands in feeding the material into the machine be also rhythmic and monotonous, then a deadening hypnotic effect is produced upon the mind; such is the work of a punch-press operator.

Further, automatic work, in addition to putting the thought centers into disuse and producing a lethargizing effect, is repressive of individuality. There has been developed in each of us, through the self-directed work of our ancestors in past centuries, a natural instinct for self-expression. Prior to the day of subdivided automatic operations the worker had an outlet for his self-expression in his work; now, for the automatic worker, it must come in his idle hours, and often in forms which lead to many of our most vexing sociological problems. Unexpressive (or repressive) work is unnatural work, and must incite to mental and physical protest.

Modern Industrial Conditions

Now, we cannot reverse our present economic order of things. Work which does not require mental activity is increasing, and will continue to increase for a long time to come. The condition is here and philosophical discussion will not remove it.

*Results of Decrease of Energizing and Increase of
Enervating Work*

The situation, then, sifts down to this: Energizing work is decreasing; enervating work is increasing. We are rapidly dividing mankind into a staff of mental workers and an army of purely physical workers. The physical workers are becoming more and more automatic, with the sure result that their minds are becoming more and more lethargic. The work itself is not character-building; on the contrary, it is repressive, and, when self-expression comes, it is hardly energizing mentally. The real menace lies in the fact that in a self-governing industrial community the minds of the majority are in danger of becoming less capable of sound and serious thought, because of lack of continuous constructive exercise while engaged in earning a livelihood.

Laws of the Two Kinds of Work

It is evident, then, that the general law of labor must be divided into two laws; namely, the law of energizing work, which makes for progress, and the law of enervating work, which makes for retrogression. Nearly all the work still done in the open air, where there is a dependent sequence of operation, involving planning on the part of the worker, is energizing work. Specific examples may be cited in farm work, railroad work, and the building trades. Certain work done indoors, under good conditions of light and air, is also energizing: for example, the work of a toolmaker, a locomotive assembler, and a cabinet maker. The enervating work has come through the subdivision of labor in factories, so that each worker does one thing over and over in the smallest number of cubic feet of space. This type is recognizable at once in the routine of the garment worker, the punch-press operator, the paper-box maker, and the shoe worker. On small, isolated farms, where a certain routine week by week has been established by long usage, mental development lags and the work may not be as energizing as in certain indoor occupations. In the main, however, most of the enervating work is done indoors.

Aside from the broader factors, such as climate conditions and

racial characteristics, it is safe to say that the morale of a community depends upon the kind of work it does. A rural community of about twelve thousand people, having clean political conditions, a high moral tone, few jarring families, well-kept gardens, and a good average of intelligence, is a desirable place, from the manufacturer's viewpoint, in which to locate a factory. If a manufacturer locates in such a place and employs three thousand of the men, women, and children in purely *automatic, noisy, high-speed work*, the town will change very materially in one generation. Its politics will become corrupt, its morals lax; its citizenship will lose its former mental stability and fly eagerly and earnestly from one spectacular "ism" to another; its families will be on nervous edge, with family discipline gone; its yards and houses will lose their tidiness; saloons will increase—in a word it will become a "factory town." And what was once a good community, with a high community efficiency, and therefore, a safe place in which to invest money, becomes a town of low community efficiency and a constant menace to the industry itself. Every detail of the town's life is affected. Religion lags, while the amusement parks thrive on Sunday; for, since the weekday work is repressive, an outlet for pronounced self-expression is demanded in the idle hours—or, to put it in another way, Nature goes on the defensive. The slowly upbuilt appreciation of the fine arts is quickly destroyed, for this cannot grow without harmony, orderly thought, and the desire to express ideals. Respect for law diminishes, for the law is put in the same class as an electrically wired strike fence. These significant changes are not the fault of the people who work; they are logical natural products of the work itself.

INDUSTRIAL EDUCATION¹

This paper contends that an efficient public-school system must include adequate provision for vocational training for persons of both sexes over fourteen years of age.

Heretofore we have planned the work of our public schools almost entirely with reference to "culture;" we have done very little to stimulate a vocational purpose, and less still to provide

¹ From article by Paul H. Hanus. *Atlantic Monthly*. 101:60-8. January, 1908.

for the realization of that purpose. In other words, while the schools have laid stress on culture as the end of education, they have laid almost no stress on preparation for a vocation. We may go farther, and say that, not infrequently, the schools have even disparaged vocational purposes in the training they give. They have been afraid of "utilitarian" aims, and, sometimes, by a curiously inadequate conception of their real function, they have even measured their own usefulness by the extent to which they have kept the distinctly useful out of their work.

✓ By way of illustration I need only cite the difficulty we have had in getting manual training for boys, and sewing and cooking for girls, recognized as appropriate school subjects or activities. Manual training is not vocational training, to be sure, as will be shown later on; but, whatever manual training may be, its bearing on such training is clear. And it was this obvious bearing on preparation for the vocation of the artisan and the engineer that caused the first advocates of manual training after our Centennial Exposition to urge its claims on the attention of the schools. But so strong was the opposition to teaching a utilitarian subject in the public schools that the claims of manual training for recognition have been based, until quite recently, chiefly on its "psychological" value. I do not wish to belittle the psychological value of manual training, but the strongest reason for giving it a place in our scheme of public education is that it introduces our youth to a sympathetic understanding of the constructive activities which constitute so important a part of contemporary life. It has not been entirely possible to rob manual training of its distinctly useful quality in public elementary and secondary education, although the attempt has sometimes been made. Nevertheless, in many schools it has been pretty thoroughly academicized. This is one reason why so few of the pupils and graduates of our manual training schools become craftsmen. The manual training, like other school activities, has been used largely as a means of "general education" regarded as an end in itself or as preparation for further (usually technical) education. As for sewing and cooking, they too have been urged for their "psychological" value. But there has been more speedy recognition of the weightiest reason for giving them a place in the schools,—namely, their *supreme usefulness*, in view of contemporary social conditions and of our enormous and increasing immigrant population.

It is strange that we should be so reluctant to admit the distinctly useful into our scheme of public elementary and secondary education—that is, to admit that one of the functions of the public schools is to recognize the claims of elementary vocational training as entirely legitimate and desirable. For the principle of vocational training at the public expense has long been recognized in the field of higher education. The state normal schools of the country have educated teachers since 1839; the state universities have educated teachers, lawyers, doctors, druggists, and engineers, and they continue to do so; and the state agricultural colleges give training in agriculture, and often in engineering. Massachusetts, though without a state university, has long aided technical education by scholarships in the Massachusetts Institute of Technology in Boston, and the Polytechnic Institute in Worcester, and by direct grants of money to those institutions. Massachusetts also maintains, partly at public expense, three textile schools for the training of textile workers who desire to rise in their calling.

Our elementary schools and our high schools together constitute, theoretically at least, one continuous educational scheme through which a youth, whatever his circumstances in early life may be, may secure the elements of general culture; and through which, if his circumstances permit, he may attain, on the basis of the preparation secured in school, a college education, or enter at once on professional study in nearly all the professional schools of the country. We have thus planned our educational scheme primarily in the interests of those who have a long educational career ahead of them, and who need not therefore give any immediate attention to preparation for a life pursuit.

Nevertheless, it is well known that the greater mass of our children and youth are obliged to leave school at the end of the grammar-school period, or when they have attained the upper limit of the compulsory school age—fourteen years, in most states. That is to say, the public-school system in which we take a just pride, as now planned, does not reach the great majority of our youth during the critical period of adolescence. This is the period when life aims begin to have a serious and lasting importance; when the child becomes a youth; when the habits formed rapidly acquire permanence; when the plasticity of earlier years gives place to stability. And because this is so, what happens to him then is likely to permanently shape his future. Yet during this period we send the great majority of our

youth into the world without further systematic educational influence, and usually without any comprehension of the serious purposes of life, or training in the endeavor to realize them.

The question which we have to answer is: What becomes of the great majority of these young people who enter their active life work at the early age of fourteen, with no preparation save that offered by the general education of the elementary schools? Some inquiry was made into this question in Massachusetts two years ago, and it was found that there are probably no less than twenty-five thousand boys and girls between the ages of fourteen and sixteen who are not in school. They are at work in various kinds of juvenile occupations, or they are idle. The boys become elevator boys, errand boys, office boys, they drive a wagon, or do other work in which they learn nothing, in which no demand is made on them for the application of what they learned in school; and consequently, by the time they are seventeen, eighteen, twenty or more years of age they have an earning capacity but little greater than that which they had when they first left school. And a similar fate overtakes the girls. Moreover, the unfortunate education of shifting experience and environment during these years does much to destroy both the substance and the spirit of the education which they receive when in school. The result is that at the threshold of citizenship the great majority of these young people are actually more ignorant than they were when they left school. They are sophisticated, to be sure; but they have seldom acquired the characteristics of substantial manhood and womanhood; and, as I have just said, economically they are but little more valuable than they were when they began to work. They have not become increasingly valuable "economic units." And the reason, of course, is that in the unskilled pursuits which they have followed it was impossible to acquire the character, knowledge, and skill which would give them an earning capacity proportionate to their years.

It is clear that the most valuable resources which any state has are its young men (and young women). It is clear that the greatest waste is the waste of these resources. The failure to develop them to their fullest capacity is an irredeemable failure. Boys are not wanted in the industries until they are sixteen years of age, and in some industries they are not wanted until they are past seventeen. If, therefore, between the ages of fourteen and seventeen these boys are allowed to drift, if they go about from

one occupation to another in which they do not develop such capacity for mechanical pursuits as they have, or if they remain in school and the academic traditions prevalent there turn them away from the trades, as is not uncommon, they too commonly go to swell the ranks of the unskilled; and as they grow older, of the dissatisfied, the stranded, and the dependent.

Although boys are not wanted in the industries until they are sixteen years of age, the years from fourteen to sixteen are, nevertheless, exceedingly valuable years for education—an education that teaches them the significance of a skilled vocation, and that helps them to explore their capacities and their tastes for the vocations in which skilled labor is needed. These years are, therefore, extremely valuable for purposes of industrial education. What the nature of that education might be I shall describe later on. I shall first sketch the difficulty which boys now find in learning a trade without special preparation for it.

Under the specialized condition of modern industry it is usually exceedingly difficult for a man to learn his trade in the shop, and sometimes impossible. The old apprenticeship system, which enabled a man to learn the whole of a trade, is dead. It is well known that to-day the man in the shop works at a part of the product with a given machine, and knows little of what is done toward the completion of that product by other men and other machines. He is a narrow specialist, working day by day at the same kind of work under precisely the same conditions, the machine requiring but little exercise of thought or ingenuity. Usually he knows little or nothing about the machine itself. The shop has machinists who repair the machines. Under such circumstances a man loses the habit of thinking, since no demand is made on him for thought. It is true that all men have not "all the conveniences for thinking," even if they were called upon to think, but under the exigencies of the modern shop the habit of thinking is rarely developed. This specialization in modern industry is, however, highly profitable to the manufacturer. It is one of the reasons why goods can be produced so quickly and so cheaply. It is, therefore, like other modern developments, a condition which will survive.

In a shop if a man wishes to learn his trade, he has, as I said a moment ago, great difficulty in attaining his end.

What happens, then, to our ambitious young man who persists in his intention to learn his trade? He quits, and applies for

work at another shop, asking for work at another machine, saying that he is, let us say, a lathe hand. Meanwhile, he has naturally become somewhat familiar with a lathe and knows something about the working of it. Shortly after he begins his work as a lathe hand, the foreman comes around to see how he is getting along, looks at the work, and says, "You can't do this work; you can go." Naturally the man has to go to another shop, and there the process is repeated with the possibility, however, of a longer stay. This procedure an ambitious man will continue until he has made himself, by repeated changes and brief periods of practice, a lathe hand and can do satisfactory work. I have heard of one man who repeated this process nineteen times in his endeavor to learn his trade. It won't do to talk to such a man about the dignity of labor. By such a procedure a man may require six or seven years to learn his trade; and even then he commonly learns only the processes of the trade and not the theoretical foundations of it. The mathematics, drawing, science, and the rest, applicable to his particular trade, are inaccessible to him. He has little opportunity to develop "industrial intelligence" and the "shop and business ethics" that grow out of insight into and consequent interest in his work, and the sense of responsibility born of conscious resources as a workman and a man. Consequently, although he is better equipped for steady work and for possible promotion to a foremanship than the ordinary specialist, his further progress is obstructed, if not prevented, just at the point where he could become most valuable to himself and to his employer.

It must be remembered that the great mass of young workmen are not ambitious and persistent enough to follow so difficult a road in learning their trades. The result is that most of them fall by the way; they become narrow workmen who can handle a single machine only, and whose prospects of an upward career in their trades are consequently very meagre.

Now let us follow the body of ambitious workmen whom I have described as persisting against tremendous odds in learning their trades so that they can be useful in any part of the shop, and, if possible, rise to the grade of foreman. Such men constitute an army of workers who are going from one factory to another, "stealing their trades," as the phrase is. These men spend too many of the most valuable years of their lives in overcoming obstacles to a career of usefulness—years that should represent steady progress in that career. Moreover, they cannot become

attached to a locality, and the steadying and inspiring sense of usefulness to a single employer or manufacturing concern cannot be realized.

Many manufacturers have encouraged their employees to seek instruction by correspondence, and the extent to which our artisans avail themselves of such instruction is remarkable. For example, out of seventeen hundred employees in a well-known establishment, three hundred were, last year, enrolled in correspondence courses. This is decidedly creditable to American workmen, and it is not discreditable to the correspondence schools. But the disadvantages of instruction by correspondence only are great and obvious. Moreover, since a considerable number of those who enroll in correspondence courses do not, for various reasons, continue them, a considerable part of the money paid for such courses is wasted. They do, however, afford the sole available means to many persistent and ambitious men, to secure the theoretical instruction on which their upward career depends. Besides the correspondence schools, the Y. M. C. A. and other philanthropies offer some opportunities for industrial education to men already employed in the trades. Public schools for trade instruction, aside from the public evening drawing-schools, are very rare.

It may seem odd that under such circumstances the manufacturers themselves have not more frequently established schools in connection with their establishments for the training of apprentices. But it is clear that such schools are expensive, if they are in the interests of the workmen as well as of the employer. And hence only the largest manufacturers can undertake such apprentice schools anyway. There are a few such schools; but generally the manufacturer prefers to employ the man who already knows one machine. He gets his foremen from other shops, or from Europe; or he may try to train the foremen he needs in his own shop, usually with many disappointing experiences.

Nothing is clearer, however, than that the means hitherto employed are inadequate to meet the demand for skilled labor. Manufacturers in all parts of the country declare that if they could find the skilled help which they need, they could double their plants and hence largely increase or double their output, and that they never have as many foremen as they need. On every hand the need of skilled labor is deplored, and yet we have done and are doing comparatively little to meet this need.

There is a specious American complacency which stands in the

way of the proper development of our industry and commerce.

The remarkable prosperity of the United States is due chiefly to three causes: the great abundance of our raw materials, our ingenuity in the invention of machinery, and our genius for commercial combinations. Not one of these three causes, however, can be looked upon as a permanent cause of success. Great inroads are being made on our raw materials, and some of them are even now fairly well used up. Labor-saving machinery and cheap production cannot be a monopoly of the United States, for this machinery is obtainable the world over. American commercial combinations are being imitated everywhere. It has never yet been shown that the cause of American success in foreign markets was due to the quality of the goods produced. In that respect we have not yet made much progress, and until we do we are, of course, at the mercy of those who are able to use all the resources which we possess and, in addition to use them to better advantage.

PSYCHOLOGICAL AND SOCIAL NEED FOR CONSTRUCTIVE HAND WORK

It seems almost necessary to preface a discussion of the psychological need for any subject in the school by a comparison of the part psychology has in the past played in the determination of the work of education with the function assigned to it by schoolmen today. The great educational reformers—Rousseau, Pestalozzi, Herbart, and Froebel—were convinced that the fundamental need in education was that it should be based on a sound psychology. So thoroly were they possessed with this point of view that they looked to psychology to determine not only the method but also the aim of education. The problem of the schoolmaster they conceived to be a development of that which is potential within the child. In this attitude they were protesting against an endeavor to enforce upon him a number of disagreeable tasks more or less remotely connected with the busines of life. Even Herbart, with his emphasis on the importance of the external process of instruction, agreed that the aim of education is "the harmonious development of all the

¹ By Ernest N. Henderson. National Education Association, Proceedings. 1910:666-75.

powers" or, according to his phraseology, the development of "many sided interest." Education according to this view aims at personal culture, at realizing the self, at bringing to light the possibilities that God implanted in the child; these are all methods of stating the purpose of education which leave to the psychologist the problem of determining its specific character. For who but he whose study concerns the nature of the mind can be expected to know its potentialities?

The theory that psychology should determine not only the method but also the aim of instruction possessed the minds of the earlier advocates of manual training in the United States. Among the important characteristics of the child is the fact that he has a body and is capable of doing an enormous number of things with it. Moreover, he is intensely interested in doing many of these things. For a long time the physical activities are rather more in evidence than the mental ones, and all of the instincts point toward them. Soon the instinct of constructiveness appears, fashioning the form of many games. The teacher, alert to the potentialities of the child, marks the power and the instinct to use the hand, and cultivates it to insure that perfectly developed man toward whom his task is conceived to direct itself.

It is evident, therefore, that, from the standpoint of aiming to prepare its pupils for efficient living, the modern school is more and more compelled to take into account both constructive work and the study of industry as a fundamentally important group of subjects. There is a social need for such work. But in the endeavor to fit it into the course of study difficulties arise. Since the work is commonly recognized as vocational, many parents see no need of it for children who are not expected to pursue the callings to which it is supposed to lead. This is especially true of the constructive work, the survival of "manual training." It finds difficulty in making its way into the earlier part of the curriculum, which is necessarily the same for all. To effect this entrance and to maintain its ground, it has been compelled to assume generalized forms that seem to constitute integral parts in the culture of everyone. Moreover, it has been tempted to defend these forms not on account of its somewhat remote utility, but rather on the ground of the older psychological arguments of discipline and all-round development. If these arguments are, as seems inevitable, to be aban-

done, it is evident that the elementary school must find and teach that phrase of industrial life that is suited to children and useful to all and cease to rely on the cultivation thru manual training of such general powers as accuracy, moral rectitude, co-ordination of eye and brain and hand, etc.

Many considerations conspire to make wise the postponement of the more purely vocational part of constructive work and the study of industry until at least the dawn of adolescence. It is specialized work and to introduce such training early seems bad for at least three reasons: (1) It encourages differentiation before the child has revealed himself to others or has discovered his own tastes and aptitudes. (2) It initiates specialization before a child has obtained the general foundations of his culture and while he is still immature. Many declare that this leads to prematuration and to arrested development. (3) It tries to teach children what can be learned effectively only by older persons and especially under the pressure of practical need. This results in a waste of time.

The problem of constructive work and of the study industry has thus very quickly resolved itself into one of determining on the one hand the elements of general culture and on the other those of specialization that these subjects involve. This analysis completed, the two factors can be assigned to different parts of the school program. The special training can well be postponed until the work of the elementary school has been finished. The general culture would need to be properly correlated with the age of the pupils and general arrangements of studies in the school. Herein the issue comes to involve questions of the psychological needs of childhood.

Before taking up these questions, however, let us note a little more carefully the nature of that general social need at the behest of which the studies in question should be introduced into the elementary school. It is evident that their general utility is not identical with what it has been in the past. With the development of industry into more and more elaborate organizations of highly specialized activities, the all-round manual skill so important in both men and women a generation ago is ceasing to be an especially valuable source of efficiency. On the other hand economic interdependence is becoming greater, and it is growing increasingly important for each to know many things in order to keep his activities socially and vocationally in

efficient co-operation with the activities of others in different walks of life. The substitution of economic interdependence for economic independence has made it necessary for each, if he be not to descend into the position of a mere tool of the social machine, to be taken up or laid aside at the will of those who use him, to understand the relation of his vocation to others well enough to exert a controlling influence in reference to its status and its development. He must be able not only to readjust himself to changes in his vocation, but to assist in the work of readjusting his vocation to the varying conditions of community life. To do this he needs a general knowledge of many vocations. The world of industry in general becomes of importance to him as well as his own specialty.

It is to the tasks of laying the foundations for a general knowledge of industrial life that the elementary school must address itself. In this work mere manual training becomes subordinated to the study of industry, as a method rather than an aim of instruction. The group of subjects becomes an introduction to a fundamental phase of economic life and serves a utility quite as definite as that of instruction in the three R's or in geography. Culture having this general aim may well continue after the study of specific vocations has begun. The more effectively it is mastered the more surely, we may suppose, will the trained man be master of his vocation rather than its slave.

Whatever may be the factors in industrial intelligence, it is evident that one is a knowledge of the general facts of economic and industrial life such as enables the individual to see clearly the relation of his own vocation thereto. Upon such knowledge is founded sound judgment as to the rights and duties of each craft as well as of its possibilities and necessities.

We turn now to the psychological problem—the problem of adjusting constructive work and the study of industry to the nature of the child. It may be said of both, and especially of the former, that nature has left the schoolmaster little to do. Children inherit so great an interest in such activity that it, so far from needing aid in order to be made enjoyable, constitutes one of the most effective means of arousing interest in any subject that can be taught thru its assistance. Those educational reformers, who have striven to reorganize education, making it more interesting and more in accord with the nature of the child have usually been pronounced advocates of constructive work.

We may distinguish between two general uses for which it has been employed, (a) to give motive for school work otherwise meaningless and uninteresting, and (b) to render more positive and lasting the results of instruction.

As a means of motivation constructive work possesses the following advantages: (1) It appeals to the love of activity, especially physical activity so prominent in children. To younger children the mere making of things seems worth while apart from any uses to which the product may be put. (2) It appeals to the primitive interest in the concrete, that which represents processes and results easily apprehended by both sight and touch and the muscular sense. In such material young children are absorbed, and it is astonishing how little general meaning or value is necessary to insure their interest, provided the material with which they are working be of this tangible character. (3) Constructive work connects itself with occupations and products the utility of which is seen illustrated in the everyday life about the child. Indeed they are about the first utilities to be grasped by the child's mind.

When we turn to the value of constructive work as a means of strengthening the results of instruction we distinguish two fundamental advantages: (1) It furnishes one of the easiest and most effective ways of applying the principle that learning should, or, as the "functional" psychologist puts it, must be by doing. (2) It teaches through the application of principles to a sort of practice more nearly similar to that of the life-situations in which these principles are expected to function than is that of much of the school.

The newer psychology takes the ground that we do not attend, do not discriminate, and so are not conscious, except when this is necessary to bring about readjustment between reaction and stimuli. Learning is always connected with the reorganization of our modes of behavior. Apart from constructive work the school presents only one form of physical activity of great importance. This is that of language either oral or written, and the great aim of such activity is to come into adjustment with certain standard words, notably those of the teacher. Now while such activity must always remain one of the most fruitful occasions for learning inasmuch as nothing can vie with the social situation in offering emergencies for readjustment it is exceedingly valuable not to be limited in school doing and learning to

this sort of thing. The addition of the endeavor to manipulate materials supplies a characteristically different sort of emergency. In adjusting himself to other minds the child is dealing with persons who are continually by their own efforts furthering or hindering his endeavors. In either event, the condition of dependence is emphasized. The child is led to consider success or failure to be a matter of the point of view of others; and this point of view may be and all too frequently is dependent upon circumstance and mood, inaccurate, uncertain, transitory, unjust, or absurdly compliant and easy rather than fixed, true, and inevitable. The methods of dealing with minds vary from cajolery and domineering to persuasion and the appeal to the sense of right. In any case they differ greatly from the dealing with mere physical materials, where there is one law, the mastery of which is the only method of securing results, and where the child can have no thought except that of simple direct control. It is an unquestionable addition to the resources of the child that he has accustomed himself to deal intelligently with physical materials as well as with the human minds.

Moreover much that is learned in the school is intended to be applied not in the control of men, but in the manipulation of material. In that event constructive work in the school offers the only method by which the principles can there be applied as they would be in life. That they should get this sort of school application is fundamentally important. Facts learned in order to be recited are, by a simple principle of recall, not apt to be remembered where the circumstances and the emergencies are so vastly different as in the case of school questioning on the one hand and a workshop on the other. The more nearly the school environment corresponds to that of life in general, the more likely it is that the ideas learned in the former will be applied in the latter. The identity of principle is not sufficient with most minds to overcome the effect of diversity in all other associations, and the mind recalls many things, but not that far-away bit of school learning which is the one thing useful. It may therefore safely be said that whatever is to be applied to problems in construction should be learned wherever possible in connection with such problems.

Very much the same analysis that has been made of the psychological need for constructive work in the school applies to the study of industry. In fact it deals with that phase of

life to aid in the study of which constructive work finds its principal use. Connecting itself with interest in and imitation of the simpler forms of adult life, it leads gradually to a desire to participate in the work of the world. It is to be hoped that the constructive work and the study of industry in the elementary school will ultimately be of such a character that when the pupil reaches the age at which the activities of adult life make their appeal, he will be able to make a wise choice in reference to them, and be already advanced in an appreciable measure toward the goal of his special vocation.

It is especially in connection with relating school work to the realities of life that the study of industry becomes important. The public in a democratic and commercial and industrial community are apt to find reality rather more in such work than in science and art, literature and philosophy. The children of such a public are prone to discover in the study of industry something that connects the systematic and especially the formal work of the school with the real problems of life. Under these conditions the school finds this study a means of putting motive into many contributory studies and of securing such a setting for its teaching as will make likely its application at least to the utilitarian pursuits of life.

The problem of motive becomes especially difficult in the later years of the elementary school. Children at this time pass, so far as regards their outlook upon life, into a distinctly different phase of development. We can bring this out by describing the earlier phases. The young child is a creature of impulse and imagination, absorbed in doing or thinking that which is immediately suggested to him. Reflection is gradually forced upon him. The period from eight to twelve is a critical age, an age in rivalry in games of the felt presence of social criticism and coercion in reference to all the physical and mental activities that the child puts forth. Under this pressure he becomes reflective. He subjects imagination to standards, the standards of social acceptability of truth, of propriety. Such standards vary with individuals and social groups. The teacher does not always agree with the parents, much less with the man on the street. Among the children groups arise on the basis of difference in ideals. Later on the adolescent discovers that among these warring views of life he must choose one for himself to be his own. He arrives at the age of independence and becomes himself a critic, declaring his freedom from coercion.

It is at this age that the rate of elimination of pupils becomes portentous. The reasons that cause children to leave school are very numerous, but unquestionably a very large proportion, at least a majority, give up because they cannot feel that it will repay the sacrifice of effort or expense or both that it involves. Other reasons are for the most part contributory. This one is fundamental. There are two classes of children to whom school work does not seem worth while. One of these consists of pupils who can and do get on well in the school but find the activities on the outside more interesting and profitable. The other is composed of pupils who do not prosper in school. Such children naturally grow discontented. No one can be expected to regard as worth while for him that which he is incapable of doing. Moreover, in such a competitive atmosphere as a school merely to pass means practically to fail.

Now it is evident that just as constructive work may offer the motives of activity and the making of concrete things to younger children, so to older ones it, especially when combined with a study of industry, will seem worth while to many of both these two classes of the ordinarily eliminated. For those who fail in the older studies of the school, the constructive work may offer a field for success. For both classes it should constitute a main part of the later school program. As an integral part of the preparation for life, it deserves a place proportionate to the number of those who need such preparation and the amount of such preparation it is possible and desirable to give.

We have reached again from the standpoint of the study of the developing nature of the child the issue of specialized vocational training. It is evident that the general training of the earlier years of the elementary school should be what is deemed necessary to all and what introduces those who are to specialize in some form of industry to their work of specific preparation. We have not, however, as yet considered sufficiently the problem of the initial steps in differentiation or specialization. This problem is in our democratic system one among the most difficult and important that we face. It is a question whether the problem of determining what the vocation of the man shall be is not more difficult and exacting than that of preparing him for what has been chosen. The European systems of education, which have not been burdened to such an extent as our own with the ideals of democracy, have found it easy to engraft vocational instruction

upon an elementary system intended only for those destined by birth to some form of industry. In our boasted continuous ladder of schools, where the elementary school leads into the high school and the high school into the college, the introduction of special training in industry has not been so simple. It means differentiation. It has seemed like cutting off from the children who took it the opportunity for such careers as were limited largely to those who had completed the higher course. We have felt that education shall give to all an equal chance to attain any distinction in life. Hence we have clung to a system associated with the training of leaders, even tho such a system may be poorly enough adapted to the education of anyone else.

It is likely that we shall find our way out thru a change in our conception of leadership on the one hand and a discovery that our time-honored method of training any sort of a leader needs extensive modification, if not revolution, on the other. It is not however, the purpose of this chapter to discuss these changes. We may confine ourselves to the crying need for a system of education that shall provide training adequate, in the first place, to enable a fairly intelligent choice of a calling to be made and, in the second place, to prepare for whatever may be selected. We are fully alive to the need for the second of these advances. It is doubtful whether our educational leaders have been in general adequately impressed with the need for a system of school work the primary purpose of which should be to enable the pupil to find himself and the teacher to give him intelligent advice on the matter.

From the point of view of the development of the child, the age at which this process of experimentation toward a calling should be definitely initiated corresponds fairly well with the beginning of the seventh school year. Its external symptom is the high rate of elimination from school at that time, and its internal sign is the unrest, the questioning of values, the beginning of "storm and stress" that characterize the commencement of the age of independence, of adolescence. It would seem that at this time the secondary phase of education should begin.

There has been in our country some trouble in defining just what secondary education is. The demarcation between it and the elementary school on the one hand and higher education on the other has been one of years and of studies rather than of general function. There has been no clear reason except custom

and a felt convenience for having secondary education begin and end where it does. It is possible, however, to distinguish three well marked functions of education, which might be assigned to elementary, secondary, and higher education, respectively, without much destructive readjustment of our present system. Elementary education concerns the essentials and the fundamentals. It is the education that precedes any attempt at differentiation. With the development of the child up into the age where such differentiation becomes necessary an epoch of experimentation sets in. The main purpose of the education of this period should be to afford an adequate basis of experience for the choice of a specialty and to guide the process of selection. Such education we may call secondary. When once it has been determined as well as is practically possible what the child should do, the time for higher education, that is, for a special preparation for a vocation, has appeared.

On this plan we should not have a system in which, while elementary education is supposed to be for all, secondary education is only for a few, and higher education for the very few; but each phase of the work would find representation in the education of all or most pupils. At the beginning of the seventh grade the work of experimentation might well begin. A large number of children have by this time demonstrated their **unfitness** for what might be called a professional career. For them the severer studies, involving the power of mind to grasp and utilize the abstract ideas and processes involved in mathematics, science, language, etc., are not profitable. They should be given experimental work along the line of industrial training supplemented by concrete cultural work in literature, civics, geography, and science, such as adapts them for the duties of citizenship and social life. We may tentatively suggest that two years of such work put these children in the position of making an intelligent choice of a vocational school in which to complete their education.

At the beginning of the seventh school year those whose mental traits make it desirable might enter schools where the older type of secondary work is prominent. But we might expect that continually new revelations will be made in regard to the talents and tastes of the pupils, and that little by little those who are unable to do the work that leads to the higher professions will be selected out to enter vocational schools that prepare primarily for

intermediate positions in industry, commerce, the civil service, etc. The period of secondary education would on the theory proposed, extend until the choice of a vocation has been made on the basis of sufficient experience. The knowledge necessary to make such a choice is of necessity more extensive, the more advanced the vocation. Properly speaking, the secondary school would include the present liberal college course.

The characteristic feature of the secondary school on this theory is the emphasis upon experimentation and selection. In such a school the experimental subject would be especially prominent. This may be defined as a subject studied primarily for the sake of finding the extent of its appeal to the powers and interest of the student. Experimental studies therefore should not be elective but prescribed, for their function is to compel, as it were, the student to explore the field of human thought and endeavor adequately before he is permitted to settle upon his peculiar specialty.

An adequate range of experimentation would involve the secondary but by no means unimportant gain of a broad outlook upon life. Thus the student will be getting his liberal culture to a great extent while he is engaged in the process of selecting his vocation. The study of industry and constructive work would thus constitute factors not only in the elementary but also in the secondary education of every student. All children would have enough of them to know and to do the things that they concern in so far as they enter into the life of it all. Every student should have enough more such study to enable him, no matter what his calling may be, to understand and to sympathize and co-operate with those whose life work lies in these fields. The process of differentiation initiated by the completion of the elementary course would still leave to all some further work along such lines both for experimentation and culture. We may assume that when the experimental work has been completed the needs of culture will have been in most cases fairly well satisfied.

The current usage assigns vocational schools of the trade-school or technical school type to secondary rather than to higher education, where they would be placed according to the classification just suggested. This arises historically because such work is usually taken in lieu of the secondary training in the older sort. The classification made in the preceding discussion aims to provide a basis for the determination of the character and function

of constructive work and the study of industry as we go from the age of elementary education on into that of experimentation toward a vocation and further into that of specialized preparation for the one selected.

SPECIAL NEED OF THE NE'ER-DO-WELL¹

The opportunities, interests, and duties of life to-day for the modern boy or girl living in an industrial community and for those that lived in rural communities of fifty years ago are not the same. Since our public-school system is the institution assigned by society to prepare our boys and girls for life, it must accordingly change, add, or modify the traditional course of study to meet these additional educational needs. This means that the school must supervise the child during the whole educational process,—when the child enters school, the training provided for him, the age at which he goes to work, the character of the work he performs, and his proper training and guidance while he is working, and until he reaches the threshold of manhood or womanhood, at eighteen or nineteen years of age.

The traditional course of study must be changed from the first to the last grade so that it will educate the whole boy and girl of this day. Special attention should be devoted to the aptitudes of the great mass of children who are motor-minded and who must be reached through the manual and objective methods of teaching. A manual-training class should be attached to every school in this country. Children as soon as they go to school should be taught to use their hands, as the father and mother did in the rural communities a generation ago. It is very important that they should be taught when they are young. When a motor-minded pupil arrives at the age of adolescence, prevocational classes should be established so that his interest in academic work will be continued by correlating it with his vocational interests,—that is, practical work. The aim of all this will be to make every boy and girl, when he reaches the age of fourteen, know how to use his hands with some degree of skill, to be "handy" in addition to the ordinary academic work. For the

¹ From "Education of the Ne'er-do-well," p. 25-31. By William H. Dooley. Copyright 1916, by William H. Dooley.

majority this will not necessitate any more hours of school work. We have evidence that, by reducing the time allotted to academic work and substituting manual work, the mind is stimulated. By so doing, the child will not, as soon as the law allows, leave school with that feeling of repulsion that is so prevalent to-day.

Manufacturers find that it is necessary to employ juveniles to maintain a scale of wages adjusted to the skill required and the amount of work performed in a plant. To illustrate: If a manufacturer pays a person one dollar and twenty-five cents a day for placing empty spools on a spinning frame in place of full ones, who then rests a half-hour, it causes dissatisfaction among the other help who work continuously for one dollar and twenty-five cents a day. This is one of the important reasons why juvenile help is employed in our factories. We sometimes think that child labor is cheap and that that is the reason it is employed. Cheapness of labor is not sufficient to attain industrial success. Cheap hands must be taught, and taught well, or work in the end will cost more than that of more experienced hands who possess greater skill and have acquired more understanding of their work.

The problem before us in regard to child labor is to retain our industrial supremacy, our present industrial organization of highly specialized work, and to develop the whole boy and girl so that we may have successful men and women with industrial habits to live useful and happy lives. This cannot be done by groups of social workers in this country attempting to tear down our industrial system by forcing unjust legislation on the community, such as compulsory full-time education for children up to sixteen years of age or over. In spite of the many assertions, from social leaders to the contrary, the experience of educators in this country and abroad who have made a study of education in large factory centers leads to the conclusion that it is a positive harm to retain the great mass of children between the age of fourteen to sixteen in school on a full-time basis. These children have neither the mental equipment nor the interest to devote so much time to academic work. They have descended from ancestors who mature early in life and have intensely practical ideas, and therefore should develop useful industrial habits during the early part of adolescence.

Our social and industrial system is a growth, and we are at the present time passing through a period of change in it, the like

of which has never been experienced in any equal space of time during the world's history. Any attempt to degrade our factory system, particularly the textile industry, which employs practically two-thirds of the children that have left school as soon as the law allows, by saying, "It is ignorance on the part of parents who allow the child to enter the mill or factory, and that neither power nor advantage is gained by entering the industry at an early age, and the child who does enter associates himself with our most undesirable population," is detrimental to the child and to organized industry.

All this means readjustments of our social institutions, particularly the educational system. The school and factory must work hand in hand. The school must supplement the factory in such a way as to overcome the deadening effect of highly specialized work, and at the same time give a training that will develop the child so that when he has passed his usefulness in that juvenile work he may have the training and intelligence to enter other lines of work.

In order to do this effectively, we must provide for working girls and youths opportunities on a part-time system, an education which will meet with their interests and tastes, assisting each to become proficient in some line of skilled work that he may enter after passing his usefulness in the so-called "blind-alley" positions.

The educational training on a part-time basis for the boy in the so-called skilled occupations, where there are sufficient opportunities for him to remain all his life, should be for greater efficiency and civic betterment. For the boy in the so-called unskilled and factory occupations, where there is a lack of opportunity for further advancement, there should be trade training, so that he may receive during the years from fourteen to eighteen the beginning of a skilled trade, so that he may be accepted, at the end of his "dead-end" employment, into one of the skilled trades as a useful beginner.

For the girls in skilled vocations, the training must be for greater efficiency, a supplementary trade training in case of seasonable employments and a training in housekeeping. Since women have more or less to do with the home, it is doubtful if there is a more effective system of education than housekeeping. It will bring both health and happiness to the home. On account of the unsatisfactory environment of both home and neighbor-

hood, the school must assume also the burden of looking after the physical as well as the mental development of the child. During the school session, organized games and physical exercise should be taught. In this manner it is possible to continue the interest of the child in school work, to conserve and increase his knowledge to meet daily needs. In addition the school should follow up the boys and girls while they are working and give them helpful advice. Vocational advisers should assist and direct children in selecting vocations and while attending compulsory part-time school. Intelligent selection of an occupation is the result of intelligent preparation. We cannot expect young people to find themselves vocationally without furnishing them with raw material for thoughtful selection. Our public-school system should audit our social and industrial accounts and publish the opportunities available to young people, that they may choose their life-work scientifically, and in this way reduce our scrap-heap of unskilled labor to a minimum.

"Blind-alley" jobs will then become ports of entry into more skilled and profitable positions.

SOME SOCIOLOGICAL PHASES OF THE MOVEMENT FOR INDUSTRIAL EDUCATION¹

To one who studies the present movement for vocational education, and especially that phase of it which we designate "industrial education," the conviction becomes more firmly fixed that its impulse springs from those profound forces which seem to be impelling a general social advance and which are dominated by the desire to secure for the less prosperous half of the population a larger share in the good things of life.

Representatives of this less prosperous half, to bring this about, are working for the establishment of minimum-wage boards, old-age pensions, industrial insurance, employers' liability laws, and adequate education for themselves and for their children.

Representatives of the so-called ruling classes are frequently

¹ By F. M. Leavitt. National Education Association. Proceedings. 1912: 922-6.

found to be working for essentially the same ends with the belief that in this way only can be averted a struggle between employers and employed which, wanting a more equitable adjustment of present conditions, may be fraught with grave and destructive consequences.

At all events it seems to be reaching the social consciousness that individual efficiency and the individual's sense of his responsibility to society must be enormously increased.

In working out the solution of these complex problems there is probably no single institution in which society in general places as much dependence as it does in the public schools. It is becoming evident however, that an increasingly large percentage of all who are relying on the public schools in the emergency unhesitatingly express the opinion that the ideals of the schools must be modified if they are to play the important part in this social advance which they should.

It is one of the curious things about our American educational system that, conceived in a spirit of socialism so far as its organization and administration is concerned, it has tended, nevertheless, in its subject-matter and in its methods of instruction, to emphasize and to promote extreme individualism. Supported by funds by assessment on all the property of the community, and organized in such a way as to make possible, if not compulsory, the attendance of all children, presumably for the common good and as a sure foundation for social democracy, the ideals of the schools have centered the interests of the pupils on individual advance and on the ultimate attainment of conspicuous success in the competitive social and economic struggle rather than the desirability of giving the largest possible service for the common good.

Perhaps in no phase of recent scientific educational study has the purely individualistic ideal been more clearly seen than in the realm of child-study and psychology. It is not my purpose to state that such activity has been necessarily undemocratic, unsocial, or inadvisable—quite the contrary. It can be shown that psychology has contributed in no small degree to the tremendous advance which education has made in the last quarter-century and that it has helped to bring into the schools the very elements which may be most effectively used in socializing education. So far as it has been worked over into terms of educational method, however, psychology has been distinctively individualistic. While

social psychology—group psychology—is such a recent development that its technique and terminology are still in the making, it can hardly be doubted that its influence on public education is destined to be even greater during the next twenty-five years than the psychology of the individual on which we have thus far relied. It will demonstrate that our citizenship as a whole must be taught to have less interest in its rights and more in its duties, less thought for the possibility of reaching eminent position for oneself and more for the desirability of securing the contentment and happiness of the less fortunate.

I believe that the present movement for industrial education has important contributions to make to this socializing of popular education and it is to this phase of the movement that your attention is asked.

It is an oft-repeated statement, but one which must nevertheless be briefly discussed in connection, that many educators are strongly opposed to the vocational motive in education.

In a discussion recently in a leading educational journal is found the following statement of the "bread and butter" principle as seen by the classicist:

In obedience to popular clamor, (they) resolved to replace the literary education, which had held sway for centuries, by a study of exact science. They kept sternly in view the demands of the counting-house and workshop. We will not train the boy's mind, said they; we will pack the mind with useful facts. He shall not think; he shall remember. Strictly cut off from a knowledge of the past, he shall live solely in the present. Thus there will be no waste of force. A full pocket shall reward his industry, and if his head is empty of those general ideas which cumbered his father's, so much the better for him. He will get rich the more quickly.

It seems to me that the distinction here drawn between the "cultural" and the "bread and butter" aim of education, with the conclusion that the latter is wholly to be avoided as sordid and mean, has a perfectly natural origin, a brief discussion of which is pertinent to our subject. When these ideals were in the making, the vast majority of students came from those classes of society whose members were economically independent even if not actually wealthy. The pursuit of knowledge for the sake of increasing an assured income, already sufficient, or with hope of improving, financially, a career sure to be rewarded by an adequate living and by social distinction, was very properly considered sordid and unsocial. To use education merely as a means of en-

hancing one's opportunity of gaining a larger measure of the material things of life, or of controlling and exploiting one's fellow-beings, was indeed justly condemned. The result of such action could only be to increase the gap between the rich and poor, the able and the incompetent, the wise and the foolish, and therefore to disrupt society.

Today, when universal education is our aim, "bread and butter" education for the masses of mankind will have exactly the opposite effect, will tend to bring the masses and the classes closer together, to secure unity in diversity by giving each a more genuine appreciation of and respect for the other. So far from being sordid and basely utilitarian, it represents one of the finest ideals the human mind has conceived and sets forth a philosophy of life which can be fully realized under no other conditions than complete solidarity.

Another important social phase of the industrial education movement is that it is bound to have a profound effect on the whole system of popular education. This will be true whether our traditional schools admit or reject the new forms of education. The conditions of industry are such that the employer can no longer afford to train his apprentices in the old way but must instead evolve new methods to meet the new conditions. Training must be had and, if the schools refuse to give it, the privately controlled schools will draw large numbers of the pupils away from the public schools, thereby greatly reducing the influence of the most potent socializing institution of our times. What seems more probable, however, and what is infinitely more desirable, is that the more vital and direct methods which are being developed in connection with industrial training will modify and greatly improve the methods and ideals of general education. Indeed there seems to be little doubt that this will be the outcome, since vocational training is now to be found in almost every part of our school system. Great activity is to be observed in the elementary schools where retarded and discouraged children have been brought to see the meaning and the need of education by the utilization of the vocational motive, and have been led, by more interesting and stimulating pathways, to the door of the high school. The high schools have modified entrance requirements and have arranged and administered with wholeheartedness less extended courses for those needing them and have not only shortened the courses but have vitalized them as well by relating them

to possible future vocations of the pupils. Separate schools have been established for those who for any reason cannot be cared for in the vocationalized classes of the elementary and high schools, and part-time and continuation schools and classes have been formed for those who must work while they study.

The present demand for the enlargement of the function of the public school, thru the introduction of industrial education, is but a step in the evolution of this popular institution. The advance has always been brought about thru the efforts of those seeking social ends and the betterment of the people, and, as often, has been opposed by conservatism. In this onward movement it is clear that we have reached a crisis similar in principle to others which have periodically confronted popular education when advance has become imperative and when such progress has been opposed by the ruling interest, whether wealth, aristocracy, or sectarianism. Unless we are to reverse all precedents the schools will again widen their sympathies and will receive and instruct a still larger proportion of the country's children, thus greatly increasing their social value.

Another sociological phase of industrial education is its relation to criminology. That industrial education is to have an immense influence in preventing juvenile delinquency is the belief of those who have studied faithfully the lessons taught by the reform schools and penitentiaries. Certainly nothing could be of greater social significance than the reduction of crime and especially crime for which society, rather than the delinquent, is mainly responsible. It becomes entirely clear, as one studies the methods employed in a modern reform school and the records of those who have been discharged from these institutions, that the same kind of training for the boy before commitment would, in the large majority of cases, effectively remove him from the probability of delinquency. When taught the satisfaction of work well done, when made to see that the way thru is infinitely better than the way around a difficult piece of work, even tho it be rough manual work; when he has once experienced the pleasure of actually carrying his own weight, economically considered, he is far less likely to proceed by the devious ways resorted to by those whose wit has been developed more than their skill. That "joy in work" is no mere sentimental phrase becomes a conviction on carefully observing large numbers of reform-school boys engaged in their somewhat skilled occupations.

It is obviously essential to the stability of society that intelligent contentment prevail thruout the group. One of the purposes of industrial education held, more or less consciously, by its advocates relates directly to the contentment of the masses. To my mind it is one of the most subtle and far-reaching aspects of the movement. That social discontent exists no thoughtful observer will doubt, whether he can assign the cause or not. It has been claimed that the schools are partly to blame because of the false ideals of pleasure which they have engendered. These ideals we are told give undue emphasis to the joys of consumption, the spending of money, and passive entertainment, and ignore almost entirely the finer pleasures to be derived thru creative work or even the sterner joy of productive labor.

Our courses of study seem to be so devised that they develop the child to the point where he can enjoy, intellectually and æsthetically, many of the things which cultivated people prize, beautiful surroundings in the home, music, art, poetry, the drama, and travel. This is well, but where such tastes are developed without equal attention being given to the development of ability to secure the means whereby the desires may be satisfied there is brought about an unbalanced condition which frequently leads to the conclusion that money is the one thing needed to secure happiness. The joy of consumption, rather than the joy of production, is the end which they seek in common, it must be admitted with American society in general. It is believed that a rational plan of education which lays especial emphasis on the constructive activities will enable many to know the pleasure which comes from such work and to turn to that for some if not a large part of their recreative entertainment, as well as to have a clearer appreciation of the substantial satisfaction which their daily work may yield.

Finally, industrial education is sociologically significant for what it is making possible in the way of collective control, that is control by the community, of the conditions of child labor. It is a matter of social concern that children are now being warped, degraded, killed, mentally, morally, and physically, by their early industrial experiences. It is of immense moment to the common welfare that these experiences are often wholly discouraging to the young workers, thereby creating or strengthening the belief that work is a curse, a thing to be avoided as far as may be, and that the prizes of life are reserved for those who exploit rather

than for those who serve. Industrial education is so successful in drawing attention to this matter that where such education is an established fact it is much easier to secure the extension of child-labor laws, the inauguration of systems of vocational guidance, the co-ordination of apprenticeship laws with those relating to education and child-labor, and the establishment of minimum-wage commissions to fix and maintain suitable rates of compensation for children and minors. All these are of distinct social significance and the accomplishment of them will be impossible without a system of industrial education. In fact a thoroughgoing system of industrial education leads inevitably to vocational guidance, child-labor and apprenticeship laws, and public wage boards, and will serve to bind them together into a single function.

In the great problem which confronts civilization today, the working out of right relations between man and man, the "masses" will be the first to accept the conditions of advance and to work and sacrifice for it.

I repeat that, so far from being a narrow utilitarian movement, I believe that industrial education allies itself with the broadest and I may say the most spiritual movement of the century, the promotion of genuine brother-hood. Brotherhood is possible only where there is frankly accepted the ideal of unity in diversity.

Unity in diversity; this is also the keynote of industrial education. Its promoters are learning to treat with equal respect and to strive equally hard to administer to the needs of the future factory worker, the future accountant, the future electrician, or the future engineer. And if education learns to dignify all vocational life by giving it consideration in its various forms and relations, who shall say that this will not have a profound influence in helping us as a nation to develop a unity of purpose out of the wonderful diversity of conditions and opportunities which our country affords and of which we are justly proud and which in a social democracy should somehow be made to minister to the common good?

INDUSTRIAL HYGIENE AND VOCATIONAL EDUCATION¹

I. *The Anomaly*

To those who have studied the pressing problems of working people a serious anomaly appears in American industrial education. The movement for industrial education has been a most desirable effort to help the great masses of our people solve successfully thru public education one of the most serious problems of life—that of making a living. A rough analysis of this problem has associated vocational preparation with forges and lathes, special schools, and costly apparatus. Educators have clamored long and loudly for appropriations with which to begin this work. They have said, "We can do nothing until we get the money with which to purchase this equipment." And they have done nothing without it.

Now a more thoro survey of the prime needs of the world's workers will reveal two very essential and fundamental factors of vocational education which most industrial courses and schools very largely overlook, and which are, moreover, comparatively inexpensive. These are, first, the development of general industrial intelligence, including acquaintanceship with the complex industrial world of the present, and secondly, thorogoining education in general, industrial, and occupational hygiene. While they are waiting for appropriations, school systems could be giving, without very great outlays of money, fundamental instruction with regard to our complex industrial life and this invaluable health education, largely by the use of the schoolmaster's favorite instrument, the book—a simple, inexpensive tool.

Let us glance at just one of these primary propositions—that in reference to health education for workers as primary vocational education. What is the health problem of our working people? From extensive studies of mortality statistics and the data of private and public insurance agencies here and abroad, as well as from many special studies, we learn, with respect to the illness

¹ By Louis W. Rapeer. National Education Association. Proceedings. 1914:668-72.

problem, that there are in this country no fewer than thirteen million cases of sickness each year among those engaged in industrial pursuits. The effects of such illness are well known. Illness reduces bodily efficiency, causes loss of work and of wages, and frequently ends in death. Webb, Devine, and other social students and workers are agreed that to the sickness of workers is directly due over 25 per cent of all poverty and destitution.

Rubinow, in his *Social Insurance*, reports that in Austria, where the government insures workers against illness and where accurate records are kept of the illness problem of workers, with nearly three million workers insured in 1907, there occurred 1,623,000 cases of sickness, causing a loss of 28,000,000 days; 53 per cent of the entire working army suffered such a loss, and the average time lost was seventeen days each. How much of low vital working efficiency there resulted could not well be measured.

In Germany, with over thirteen million insured against sickness, there were 5,200,000 cases of illness in 1908, and the number of days lost was 104,000,000, an average of eight days for each of the thirteen millions insured. Of course, there are only partial costs since the public taxation for public hospitals and other such health agencies is not here included, and still other costs are omitted. Since we have as yet in this country no such systems of social insurance, we do not have accurate statistics of the health problem of our own workers. But these illness losses may, from several sources, be computed as an average of over two weeks of work and from 5 to 15 per cent of the worker's annual wages, including medical, burial, and other expenses both private and public. When we study the annual wages of our workers, a large proportion of them now being industrial wage-earners of the factory type, and find that the median annual wage is not far from \$650 to \$700, and that this sum is hardly up to, and certainly not above, the minimum amount necessary for a family with which to maintain a minimum standard of living—when we see our industrial population working so close to this minimum, then we realize what direct and indirect loss of even one-twentieth of the annual wages for sickness really means, especially when we learn that 50 per cent of it is reasonably preventable. These data, of course, hardly show up the actual death and lowered vital efficiency problems of workers. Our working population cannot afford such losses! Over one-fifth of the children brought into the world each year, at such cost, die in the first year, and half

of all born into the homes of our workers die before the age of twenty-three. Over 1,600,000 of our total population die each year, 100,000 of them of school age. This is an annual loss of about 2 per cent of our total population, and in a modern enlightened civilization, is about double what it should be. The most fundamental form of general and vocational training is that which would enable the working population to meet more effectively these deaths, illness, and lowered vital efficiency losses.

Moreover, the young men and women, the boys and girls of our schools, very much need this type of vocational education because they themselves are seriously defective and ailing. Dr. Chisholm's studies of the girls preparing for work in Manchester, England; the great amount of data collected in our medical supervision of schools; and the statistics of examinations for army recruits and for those entering industry aboard—all show the extreme importance of complete and thoroughgoing systems of educational hygiene for our working population.

We do not need, I think, to demonstrate by the statistical studies that have been made that the general, the industrial, and the occupational hygiene phases of vocational education are woefully neglected in the schools of this country. Our teachers do not know the elements of general, personal, and public hygiene, not to mention industrial and occupational hygiene. We have few good textbooks on hygiene in use, and little or no time and attention is given to the subject as a school study. An extensive study of actual courses in vocational education shows that, with but practically one exception, the only progressive work of this type is being done abroad. Our vocational courses, like our general elementary and high school courses, almost entirely overlook this form of vocational preparation.

The anomaly then, in summary, is about as follows: Hygienic education an indispensable phase of vocational education, and yet an almost total lack or great inefficiency of health education, both general and vocational; millions of workers suffering high illness, death, and lowered vitality losses, and yet educators clamoring for the costly tools for a narrow type of vocational training while at the same time neglecting the preparation so near, so fundamental, and so comparatively inexpensive.

2. *What Is Being Done*

The best evidences I have been able to find of adequate attention to this important matter have been in Munich, Germany, some schools of England, the schools of Sweden, and the Manhattan Trade School for Girls (not true of the one for boys as yet) in New York City. Dr. Kerchensteiner at Munich not only has medical examinations and follow-up work and attention to sanitation and physical education, but he has a regular course intended to give intelligence with respect to the complex industrial and civic world of today, and the elements of general, industrial and occupational hygiene. His course is called "Civics and Hygiene." Sweden has all these features but adds to them a most progressive feature in the form of health vocational guidance and follow-up work, including annual medical examinations by government medical examiners, until the youth reaches the age of eighteen. A young man may be changed from occupation to occupation; he may be given shorter hours and guidance as to his health regimen; and may even be kept out of work altogether until he is physically fit. In England, medical supervision and follow-up work with some health vocational guidance is rapidly making its way. In these countries the insurance of workers against sickness by the state makes the problem of health preparation perhaps not such an acute one as here, yet these countries are leading the way in school health work.

The Manhattan Trade School for Girls gives each girl careful physical examinations, annually or more often, and supplements these with thoro follow-up work; the home and school environments are made as sanitary as possible; medical, corrective, and recreational gymnastics, including plays and games, are much used, meeting individual and community needs; there is a great deal of practical teaching of general personal and public hygiene, and of the most usable phases of industrial hygiene, developing later into specific occupational hygiene for those going into definite trades; and last, but quite important, is careful guidance before, and follow-up work along sanitary and personal lines after, the girls have gone into industry. Further than these few examples, we can point to little that is worth while.

The recent success of the Life Extension Institute in getting employers of hundreds and thousands of working people to furnish each one free of charge with an annual, very thoroughgoing med-

ical examination and the remarkable revelation of the low health status of most of these industrial workers show what industry is beginning to think of thoro health education from the earliest years on. It, moreover, indicates that we are here on the right track.

3. *What Must Be Done*

We have seen the anomaly and what is being done in a few places, mostly abroad, to eliminate it. Let us see what in this country must be done along this line. Briefly, we must have:

1. Thoroughgoing medical supervision of all school children, and those before and after the school years so far as possible, especially annual, or more frequent, examinations and follow-up work of a corrective and preventive character.

2. An improved sanitary environment at home, at school, and at work.

3. Adequate individual and collective physical education, including medical and corrective gymnastics, plays, games, recreation, etc.

4. Improved teaching of hygiene, general, personal, and public, general industrial and occupation hygiene, each person getting as much of each as is reasonably possible.

Careful health-vocational guidance up to the age of eighteen or twenty if possible.

Elementary and high school must pay more attention to these phases of health and education, employing teachers who have improved health training and textbooks superior to those in vogue, along the line perhaps of the Gulick and of the Ritchie series. In the year or so before pupils go out into industry, they must have added some general industrial hygiene such as is desirable for all workers; and, third, if possible, they must have some knowledge of the special hygienic precautions necessary in the special occupation the pupils are sure to take up—occupational hygiene. Those going into teaching, for example, must, in their professional training know the hygiene of their occupation; those going into the lead industries must know how to meet the lead-poisoning problem, and so on.

Fortunately, some good texts are being published which will aid in the teaching side of the problem, including general, personal, and public hygiene and general industrial hygiene. I take time to mention one entitled "Hygiene for the worker," by Tolman, a textbook on personal, public, and industrial hygiene which

hooks on to the keen interest of children who go out into industry, and which sets them at work in direct industrial preparation in the ways of health knowledge, health ideals, and health habits of value to them as workers.

Another new and high-class text for upper grades and high schools, but more general in its appeal and in its subject-matter, yet of very great importance, is Coleman's "The People's Health." This volume will be a good introduction to special industrial hygiene for those who go on into or thru high schools and trade schools of secondary grade.

Here, then, we have a tentative program for helping vocational education to enlarge its service slightly beyond the giving of mere trade skill in order to help the country meet in a healthy, vigorous manner these serious problems of life, and to attain genuine social efficiency so long set by the president of this section as the aim of education. It may seem somewhat progressive, but it is not in any sense ultra. As Seager says in his "Social Insurance": "In the United States we are still so far from considering illness as anything beyond a private misfortune against which each individual and each family should protect itself, as best it may, that Germany's heroic method of attacking it as a national evil thru governmental machinery seems to us to belong to another planet." But this feeling will soon pass, since the governmental machinery we should chiefly use in this democratic country is the machinery of our public schools, especially of our industrial courses and schools.

INDUSTRIAL EDUCATION ABROAD¹

Industrial Schools in Germany

To meet the demand for industrial education, all the principal states of Europe have maintained training of this sort for at least half a century, and the United States has during the past decade been making rapid strides in the same direction. The especial plans of organization and instruction that have been evolved in each case seem to depend upon the temperament

¹ From "History of Education in Modern Times," p. 357-61. By Frank Pierrepont Graves, Copyright 1913, by the Macmillan Company.

of the people and upon the institutions and industrial conditions of the country or the locality concerned. In Germany, where this training has had the longest history and is probably the most effective, the work has been carried on through the *Fortbildungsschulen* ("continuation schools"). Institutions of this sort were first established by Wurtemberg in 1695, to supplement the meager elementary education, and by the earliest years of the nineteenth century a number of other German states had introduced them. The "industrial law" of the North German Confederation in 1869 permitted the localities to make attendance at the continuation schools compulsory for all apprentices up to the age of eighteen, and required employers to allow them to attend. And after the Franco-Prussian war, when a desire to enter into industrial competition with the world arose, most of the other states and localities followed the example, and this legislation eventually became the basis for an imperial law (1891, 1900). The course in the continuation schools at first consisted largely of review work, but the rapid spread of elementary schools soon enabled them to devote all their time to technical education. Through the establishment of a large number of schools of various sorts, training is afforded not only for the rank and file of workmen in the different trades, but for the higher grades of workers, such as foremen, superintendents, and technical office clerks. Similarly, girls are trained in a wide variety of vocations, and in house-keeping and motherhood. Many of these schools, especially in the South German states, have added laboratories and workshops, and the training has proved so valuable that many of the pupils return voluntarily after the period of compulsory attendance.

During the last twenty-five years there have also been developed continuation schools for general education, rather than for special industrial education, known as *Gewerbeschulen* ("trade schools") or *Handwerkschulen* ("artisan schools"). These institutions furnish theoretical courses in chemistry, physics, mathematics, book-keeping, drawing, geography, nature study, history, and law. In South Germany there is a tendency to combine theoretical and practical work, and to develop schools adapted to the particular industries of the various localities, but North German states generally confine the courses to theoretical training, and leave the practical side to the care of the em-

players or associations. The system of industrial education in Munich, organized by Dr. Kerschensteiner, has been especially developed and has attracted much attention. It includes an extra class in the elementary schools with the chief stress upon manual work, to bridge the gap between school life and employment and serve as a preparation for the industrial classes of the continuation schools. The instructors for the industrial schools of Germany are supplied through special training schools, either by giving elementary teachers short industrial courses and making them acquainted with the working of the factory, or by taking master workmen from the factory, and giving them short courses in methods of teaching.

Industrial Education in France

In Germany these industrial continuation schools are not intended to be a substitute for apprenticeship, but furnish parallel instruction throughout this period. Switzerland and Australia also use both these features in industrial training, but the one especially emphasizes the apprenticeship and the other the continuation school. Because of unsatisfactory conditions in apprenticeship, France even goes so far as to attempt to eliminate it altogether. More than any other country in Europe, it has made efforts to furnish the entire industrial training through continuation schools articulating with the elementary system. The pupils are admitted at thirteen, and obtain practice in the school workshops for three years. Iron-work is taught to all the boys, but the other courses vary with local needs. Girls learn to make dresses, corsets, millinery, artificial flowers, and other industrial products. A number of these continuation schools have added normal departments, and there is a normal school for industrial training at Paris. There are also throughout the country a number of national schools of arts and trades that are based upon the same principles as these lower industrial schools, and furnish a training for foremen, superintendents, and managers. There are also many evening classes for industrial training under voluntary auspices, but as a whole continuation education has not been nearly as well developed in France as in Germany.

Types of English Industrial Education

In England, despite the rapid industrial development, little attempt was made before the middle of the nineteenth century to improve the vocational skill of workmen. In 1851 grants were made to evening industrial schools and classes, and two years later a Department of Art and Science was established, to encourage instruction in drawing and science, and administer the grants. Schools of science were organized in 1872, and shared in the departmental grants. These institutions had at first both day and evening sessions, but after a generation became in many cases regular secondary day schools. There also arose many private organizations, held mainly in the evening, to teach "such branches of science and fine arts as benefit commerce and industries." Among these was the City and Guilds of London Institute, which registers, inspects, and examines classes in technology and manual training. At present England has three types of industrial education, each based upon the work of elementary schools. These embrace the higher elementary schools, which afford a four-year course in practical and theoretical science arranged according to local needs; the day trade schools, furnishing a substitute for apprenticeship, which is now becoming obsolete; and the evening continuation schools for children who have left the elementary schools at fourteen without completing the higher grades. Thus, while industrial education is still in the experimental stage, England has come to recognize that the country cannot successfully enter the world competition without it.

1. The first of these is the
fact that the system is
not self-sufficient. It
requires a constant
input of energy from
the outside world.
This is a serious
drawback, as it means
that the system is
not truly autonomous.

TRADE SCHOOLS

NEW REQUIREMENTS MADE BY THE TRADE SCHOOLS¹

The modern courses for preparing boys and girls for wage earning are instances of fundamental changes which are taking place in education. Twenty years ago handwork in the schools was little appreciated. Even those who urged its value were often foremost in disclaiming its industrial signification. Today a new era has dawned and we freely discuss industrial subjects and their interrelation with long established courses, as factors in trade education. A few well established schools have clearly shown us that the methods of the business world and not the ideals of some student in his cloistered study must govern the trade school curriculum. In such schools are found a close connection with the working world, direct business organization of shops, interest in problems of labor and willingness to change courses of study in response to the demand from outside work-rooms. The students in these schools are busy and intent at their tasks and show happiness and ability in work. My word today is from experience with the training of girls.

In these real trade schools we can no longer cling to ideals of what we feel a young girl worker's education should be. We must face what it can be. Let us think for a moment of the situation of working girls in a busy, industrial city. They must work for self-support. They must do it immediately. They should have a decent wage. They should have good health and ideals of life that they may be successful, womanly citizens as well as able wage earners. What new demands do these specific requirements place before the schools?

First: *They must work.* It is not a time for us to stand aside and say women should remain at home, even if that is an

¹ By Mary Schenck Woolman, Director of Domestic Arts Department, Teachers College, New York City. National Society for the Promotion of Industrial Education, Proceedings, 4th annual meeting. 1910.

ideal to be held before us, for the economic condition of numbers of families in our large industrial centers is such that the daughters cannot remain at home, and we therefore find six million women in the United States occupied with some remunerative occupation. The educator must not lead them away from this sore need but must find out at what task it is best for them to work. At the same time he must consider at what task they are willing to work. Every town and industrial city has its own problem as its occupations differ in kind and organization. The trade school which wishes to help its community must work in a live field of endeavor and find out what the women are doing in the community and how the employers wish the work to be done. The co-operation of the working people themselves is required to know their interests and proclivities. Employers must give their practical suggestions and judgments and the trade union is needed for guidance in many directions that the school may not interfere with the best interests of the working world. The study of trade conditions for girls in already established trade schools has brought numerous occupations to the front for them, and will further bring other trades which skilled workers in Europe have long pursued. There are many opportunities for women in important occupations which require skill. Often these trades are the old home work taken from the home and made commercial and the student can utilize her training both at home and in business. Trade schools have opened up new possibilities for women's employment, but at the same time they have made new requirements for teachers. The old teachers of handwork are in general incapable of the task. The normally or even professionally trained teacher cannot cope with the problem. Specific knowledge is needed in each division of a trade. Even a very capable Domestic Art teacher, however successful in elementary or high school, is not the one to prepare students to work in dressmaking or millinery shops in the large cities unless she has herself worked long enough in trade to thoroughly understand workroom requirements. On the other hand the ordinary trade worker is so highly specialized that she makes a poor teacher, though she may command a high market price as a worker. She can drive a workroom, but she cannot teach it. Both classes of instructors need special training to fit them for trade school teaching.

Women's industries in general centre about the skilled use

of a few tools. The trades utilizing one tool branch out like a tree from its trunk into innumerable limbs, branches and twigs, each division being a separate trade in itself in large institutional cities. The most skilled occupations require the use of the sewing machine, foot and electric power; the paint brush; paste brush; and the needle. Some training for skill in the last tool mentioned will affect more than 200,000 women workers in New York City alone. The point I wish to make here has two aspects, first, these numerous trades centering about each tool are not always evident unless one carefully investigates woman's work in factory and workroom. Second, the great variety of these trades bring teaching difficulties of no mean order such as (1) the only instructor who can train children for the workroom is the one who has had personal experience in an occupation, (2) trade workers seldom know more than the one small division of industry, (3) a school cannot afford to have too many teachers, and (4) the teacher who attempts to grasp many of these trades fails in details of workroom practice in training the pupils under her. The thoughtful direction of trade instruction must face these varied conditions and find some solution.

Schemes of workshops and the taking of order work have become necessary features of the Manhattan and Boston Trade Schools. Experience has proved this plan to be a wise one, for (1) the students work on classes of material used in the best workrooms. (2) The ordinary conditions in both the wholesale and the custom trade are thus made a fundamental part of the instruction. (3) Through the business relation the students quickly feel the necessity of good finish, rapid work and responsibility to deliver on time. (4) The businesslike appearance of the shops increases the confidence of employers of labor in the ability of the school to train practical workers for the trades. (5) The business organization and management required in the adequate conduct of a large order department can itself be utilized for educational purposes and has its value for training students who show promise of becoming good stock clerks. This vital part of trade school instruction brings its own problems and requirements, and the trade school director must understand market conditions and prices, for there must be no underbidding of the market and the school must not be utilized during a strike to turn out goods. The conduct of the necessary business in pur-

chase of material and sale of manufactured articles is new in school work.

They must work as soon as possible; as they are financially unable to wait. This fact has already brought about many new adjustments in education, for, as the compulsory school year is fourteen the greater number of girls at that time have not completed their elementary education, and therefore go to work handicapped. In some of our more progressive cities the elementary school has felt it must adjust its last three grades and keep the girls until graduation by giving vocational instruction, hence plans have resulted in a combination of industrial handwork and specially adapted academic work for those who wish it. These plans are revolutionizing the old curriculum and are placing in the elementary school practical and cultural courses of a type which appeal to working people and their children. The immediate need for quick preparation for wage earning has tended to throw out of the course all unnecessary studies and to keep before the educator the use of the most important details only. Munich, Germany, has perhaps at the present time the best established work of this kind, having begun several years ago by special adaptation of work in the eighth grade. Dr. Kerschesteiner, who inaugurated this work, is with us at the present time and we shall hear what he has to say of their solution of the problem.

They must quickly earn a living and not be subjected to the temptation of a salary on which they cannot live, or the discouraging wandering about from one poor position to another, none of which prepares for the next. Constant investigation therefore becomes a new requirement of the trade school. It is needed in trades in order to discover new developments and methods of work, in knowing the slack seasons of trades, and how one occupation can fit in to another so that a girl may be trained for both; in working girls' pleasures such as dance halls, shows and clubs; in a knowledge of their homes and boarding houses; in their hours of work; in their employers' responsibility for under pay, and to follow them up after they are in positions in order to know how they adapt themselves to them. Until more is known of these subjects and legislation has decided minimum wage questions, the trade school must in a way insure its students proper pay, hours, and conditions by trying to adjust industrial life to them. Hence the wise trade school will help

in the solution by placing her trained students in positions, for the school knowing the capacities of the pupils can best find the right niche for each. The necessary investigations help keep the school work practical.

Beyond the requirements already mentioned stretches a great field at which we have only time to glance. A trade school that merely offers courses in trade processes and forgets the development of the mind and spirit of the student is losing its greatest opportunity for service. Girls who are trustworthy, who can think and act, who have judgment, available education, fair health and the knowledge of how to keep it so will be valuable as home keepers during the time of their business life and after it. To obtain these things for each pupil should be the aim of each trade school, that it may turn out capable workers who also will be responsible citizens. Plans to develop industrial intelligence and ideals of life have brought forth new arrangements of academic courses. A worker who has skill but whose education is lacking cannot rise high in her trade. The market is full of tragedies of women whose poor early education stood in the way of advance to the forewoman's position. Accurate expression, ability to write business letters, the use of arithmetic in specific trades, the relation of trade to the community, the workers' relations to the success of their employers, the laws enacted to help them, their own relation to new laws, and the principles underlying unions. To bring about practical work in art, history, geography, arithmetic, civics and economics, entirely new courses of study have been made necessary. Womanly ideals also have been developed through new means. The time is too short in some trade schools for actual training in housekeeping, domestic science, or domestic art; but the schools already formed, such as the Boston Trade School and the Manhattan Trade School, have proved beyond a doubt that through these new business fields of study opened to help the working girl it is possible to train the womanly virtues and turn out wise, dependable, thoughtful women.

VOCATIONAL AND OCCUPATIONAL EDUCATION IN NEW YORK CITY¹

Everybody is agreed that a certain amount of vocational education is desirable. Nobody knows exactly how to give it. "Prepare the children for practical life" is the order of the parents, and particularly of the business world. But precisely what changes are necessary to prepare better for practical life is as yet unknown. Experiment! experiment! experiment! is therefore the rule. But let not the experiments affect the efficiency of the classroom instruction in the staple subjects. For the industrial work, being on trial, may not meet the expectations of its advocates, and the known good must not be sacrificed until something else has been proven to be better.

New York city is testing a variety of methods and will probably retain some features from all of them. With its 800,000 pupils and its magnitudinous, complex manufacturing and commercial life, it is finding that no single plan of industrial education will meet all needs. No one course can be adapted to the hundreds of occupations which offer work to its school graduates.

First, it is desirable to give a practical turn to the instruction of the children in the grammar grades, putting them so far as possible in touch with the conditions of work-a-day life, giving them the knowledge of wood and iron, of paint and electric wiring, of tools and machines, of soils and plants, which the farmer's boy acquired as a matter of course as he helped his father with the chores. City life has robbed the child of the chances to get acquainted with the concrete materials and processes by which the world is kept going. Girls do not help their mother with the milking and the butter-making, they cannot dig in the garden, cultivate their own flower patches, run around in the hay fields, make their own dresses and hats at home, and cook and serve the meals during harvest for the hired hands. The realm of books to which the school introduces them is not supplemented with the realm of things which is equally important. Study is not balanced by work. So the city child, in the traditional school, is not fully educated.

¹ By John Martin. *Nation*. 102:696-7. June 29, 1916.

To rectify this defect, New York city is introducing the work-study-and-play system of school organization which has been most fully developed by Mr. William Wirt at Gary, Ind. When Mr. Wirt was engaged to advise on the changes needed in New York for the introduction of this system, the authorities were at their wits' ends to find the funds for seating all the school children. About 140,000 boys and girls were not getting a full day's schooling of five hours. Buildings were unduly congested. More millions of dollars than could be found would have been necessary to furnish a reserved seat for each child. If therefore, in addition to supplying the old-fashioned school seat, the city was to furnish worksh s, playgrounds, gardens, auditoriums, kitchens, home econon apartments, and the like, the answer came, "It can't be done." The funds simply could not be found, without passing the constitutional limit both as to bonding the city and as to the maximum tax-rate.

But, fortunately, Mr. Wirt had faced similar limitations and had realized that, if the school curriculum were to be continually enriched, economies must be discovered. While parsimony in school expenditures is bad policy, wastefulness in school expenditures is also bad policy. When the school system was the Cinderella among the city departments, and politicians, often ignorant and corrupt, granted it appropriations only after everything else had been attended to, it was the custom for friends of the schools to regard every added expenditure as a gain. But that day has long since passed in New York. The size of the appropriation is not necessarily a measure of the good that is done. When forty millions a year are available, waste and prodigality creep in, unless the school administrators are compelled continuously to seek ways of doing the work just as well at less cost. But to school people the idea of stricter economy, of devising cheaper ways of accomplishing the same object, of thinking up a more effective use of existing facilities, comes no more easily than it does to other people. Mr. Wirt had created for himself, in effect, the position of efficiency engineer for school systems. He had worked out, through numerous experiments, extending over many years, a plan for supplying the modern requirements for making city schools meet the all-round needs of the children without appreciably increasing the cost. And, as to the supply of accommodations for giving a full school day, he could actually show a substantial saving.

No wonder, then, that the authorities of New York city, harassed by a shortage of money which threatened to get worse as the construction of the subways proceeded, welcomed Mr. Wirt as a deliverer. A better education at less cost for new buildings was a programme which needed no expert salesman to recommend it. This economy is produced by putting the classroom seat to a double use each day. When workshops, auditoriums, school gardens, and generous playgrounds were unknown in city schools, the lads and lasses, perforce, sat in their seats almost the livelong day. But as the extra facilities were added they began to leave their seats during certain periods, and so the classroom seat got less and less use. At the same time the workshop and auditorium were not fully employed. Often a splendid auditorium was empty as a tomb three-fourths of the time, and the playgrounds as deserted as Sahara except for two or three hours out of the twenty-four. The solution, once suggested, seemed so obvious that people wondered why school superintendents hadn't all thought of it together. Simply arrange the school programme so that one set of children can be in the classroom, while another set, equally large, is in the auditorium, workshop, playground, library, and park. Thus you get a duplicate school and can fully accommodate 50 or 60 per cent more children with the same outlay, giving to each a far better school than the children of a previous generation enjoyed.

At first the Board of Education sanctioned the organization of Public School 45, The Bronx, and Public School 89, Brooklyn, under Mr. Wirt's direction. But as annexes to cost \$220,000 were needed in these cases before the system could be put into full operation, and the congestion in the Bronx schools was so bad as to brook no delay in rectifying it, the Board, with the unanimous approval of the Board of Superintendents, adopted Mr. Wirt's report for the reorganization of a group of twelve additional schools in The Bronx, at a further cost of \$620,000. This considerable outlay was for new sites, annexes, alterations, and equipment.

Acquiring sites and erecting annexes takes time, and as yet only seven of the twelve schools are operating on the duplicate plan. While this work of remodelling the buildings was proceeding, active discussion upon the merits of the duplicate plan continued, sometimes unhappily biased by political partisanship. But the Board of Education, without distinction of party, showed

an unusual openmindedness, while the Board of Superintendents, despite their doubt as to whether any good thing could come out of Nazareth, displayed a professional breadth of mind highly creditable. Everybody was agreed that, without deciding that the duplicate plan was better than the plan of furnishing a reserved seat and a reserved workshop bench and auditorium place for each pupil—if funds would allow—the duplicate school was superior to the makeshift, part-time system which, in our city, it was superseding; and that, under actual conditions the lavish provision of every kind which a few private schools make is an unrealizable dream for our children unless we adopt some form of the duplicate school idea.

In April, 1916, after prolonged consideration, the Board of Superintendents unanimously recommended that the Board of Education should request an appropriation of \$4,002,195 in order to complete the reorganization of the situation in The Bronx (including a new building), to extend the duplicate system to two more schools in The Bronx, to reorganize schools in two districts in Manhattan and in four districts in Brooklyn, besides one school in Queens; in all, thirty-five additional schools were to be organized on a duplicate-school plan. Its report was adopted by the Board of Education with only one dissenting vote.

Then the miraculous happened. For the first time in recorded history the Board of Estimate decided to give the Board of Education more than it asked. On May 19 it voted, in addition to various amounts for high-school purpose, \$5,106,222 "for the purpose of altering old school buildings, acquiring new sites or additions to existing sites, and constructing new buildings or additions to old buildings in the more congested sections of the city, to the end that part-time and double-session classes may be abolished, unsatisfactory and emergency classrooms and buildings abandoned, oversized classes reduced, and expected growth in population provided for through the adoption of a duplicate-school plan of organization."

Thus New York city is fully committed to a reorganization, which may cost altogether twenty million dollars, but which will rid the city of the long-standing disgrace of part-time and offer a modernized education in a modernized building to its army of children.

So much has been done to supply that occupational activity

for children in the grammar grades which is a general preparation for life and is particularly valuable to that majority which will work with its hands for a livelihood.

Next above that stage comes the more intensive vocational training of the children in the seventh and eighth grades which is supplied in the five Ettinger schools. Here each pupil may, if he chooses, spend three hours a day in well-equipped shops, ten weeks being given to each shop, in order both to acquire manual dexterity at plumbing, electric wiring, woodworking, machine-shop practice, sheet metal working, millinery, dressmaking, novelty-working, household economics, and the like, and to discover aptitudes which will indicate what trade to follow permanently.

It is a moot point whether three hours a day is not an excessive amount for a seventh-year pupil to spend in the shop, even though the school day be lengthened to six hours. Probably in each of these schools a ninth year will be added in 1917, and the shop practice be reduced for the seventh and eighth grades and concentrated more upon the ninth grade. Finally, a tenth year may be added, and the schools thus be converted into intermediate schools, to which pupils may go who expect to enter manual occupations and cannot take a full high-school course.

At the top of the Garyized schools a high-school crown may also be placed in order to meet the needs of the rapidly increasing number who graduate from the grammar school one or two years before they can be employed for wages. In Gary the high school is housed under the same roof with the elementary school, and the artificial break at the eighth year is avoided. Ultimately, some schools of that kind may be organized in New York. Every scheme for relieving the deplorable conditions of the high schools must be utilized.

What further may be done for vocational education? Shall specific trades be taught? The answer cannot be dogmatic. But experience in the Vocational School for Boys has shown that some trades can be taught and that many boys seek the teaching, while the Manhattan Trade School for Girls has demonstrated that hundreds of young girls who must enter semi-skilled occupations are glad to increase their earning power by taking courses for nine and twelve months in factory trades. Since the children who can remain at school to the age of seventeen or eighteen receive the expensive high-school course, it is but

just to offer the less favored children who must leave at sixteen or earlier a shorter course to prepare for their chosen career. Garyized and Ettinger schools will hardly eliminate the need for distinctively trade schools, though the trades which can profitably be taught in school are so few that the number of such schools will be narrowly limited. A few, however, are urgently required. In 1916 we opened the Brooklyn Vocational School for Boys, and it was overcrowded within a month or two. We plan to extend it in 1917. The Murray Hill School, though inadequately equipped, has also proved very popular and efficient.

For the children of fourteen to sixteen who have gone to work, continuation classes have been started, especially in department stores and hotels. Usually, in these classes, the pupils are taught the ordinary school subjects two hours a day in the employer's time. For arithmetic the pupils make out bills; for writing, they copy addresses; they spell the words they must daily use, and any history or geography is connected with the goods they handle. The Board of Education is considering a considerable extension of the continuation classes by the exercise of its legal power to compel attendance for four hours a week when once it has established the classes. Thus, those thousands of children who go to work without completing the grammar grades will add a further modicum of academic instruction to the meagre vocational training which they are getting in the semi-skilled and unskilled places they fill. A few continuation classes are held for apprentices in skilled machine occupations who attend for one hour in their own time, and another hour in the employer's time.

I have said that few trades, relatively, can be taught completely in schools. Gainful occupations are so multifarious, the equipment which a learner must handle is so costly and changes so fast, trades are so unstable and learners are so scattered (many establishments having only one boy or girl helper), that classes and schools would be too expensive to equip, and often too small to justify the engagement of a teacher. So the co-operative plan is being tried, under which about 540 high school pupils of the second and higher years are arranged in pairs and work in alternate weeks in shop, office, store, or factory, being paid for their work at ordinary apprentice rates. Thus the school is under no necessity to equip itself with elaborate machinery, and the pupil, while continuing the high school educa-

tion, is initiated into the mysteries of a skilled occupation. Coördinators, selected high school teachers, arrange plans of work for both shop and school, that the pupil may not be exploited by the employer nor the employer be defrauded by the pupil. Many difficulties have been encountered in the installation of this novel plan, difficulties which show that, like the other forms of vocational training, its application is limited. It cannot be expected that, permanently, a boy or girl can do as much study in half the school time as others do in full time. Therefore, progress at the normal rate is impossible. Employers are under constant temptation to consider the coöperative pupils as cheap helpers and to neglect to teach them different processes month by month. It is already clear that the coöperative plan does not offer a royal road to the universal industrial training even of these boys and girls who can afford, with its help, to go through high school, though it is valuable in selected cases.

In all the schools which are equipped with workshops, both elementary and high, evening classes are also held, to enable those who are employed during the day to widen their knowledge of trade. Scores of short courses are offered, the instruction is given by experienced workmen, and amateurism is discouraged. Though a few students have managed, through evening classes, to change their trade, the great majority improve themselves at the trade they already practice.

Altogether, though New York is not satisfied with its industrial education and each month extends and improves it, yet the amount that is accomplished compares favorably with the work done in any other American city.

THE GARY SYSTEM: A SUMMARY AND A CRITICISM¹

It is unfortunate that no advocate of the Gary system can be found who will speak of it in terms of anything but unqualified approval. So if we are to accept at its face value the latest sympathetic appraisal,² we must conclude that the problem of

¹ By H. de W. Fuller. *Nation* 102:698-9. June 29, 1916.

² *The Gary Schools*. By Randolph S. Bourne. Boston. Houghton Mifflin Co. \$1.15 net.

public education in this country has been definitely solved. The outworn cultural plan upon which, in recent years, was grafted a system which made for both greater diversity and a somewhat utilitarian purpose, is now eclipsed by an educational philosophy which at heart is said to be cultural and in its workings utilitarian. The secret of the Gary plan lies, we are told, in the fact that students learn by doing. Book learning is of no value in itself; it must justify itself in the laboratory or in some other arena of everyday life. In a word, this system is supposed to impart to the acquisition of knowledge the intense interest which a pioneer must have in adjusting himself to a new environment and in overcoming the difficulties which it presents.

Superintendent Wirt, of the Gary Schools, conveniently visualizes his aims by asserting that his system reproduces in the city the spirit of the country town, where children, by helping with the work of the farm, learned much that was practical, besides undergoing the routine training at school. In the parallel should be included the heterogeneous activities of the old village church. For the purpose of the new educational order is to provide a group of buildings which shall be a social as well as an educational centre. By a lengthening of the school day, children are kept from the streets, because the plant is open in the evenings parents are attracted to night classes, and they may also bring their children, who are free either to attend the lectures or to play about the halls and grounds. Further, an auditorium, which is an important factor in the system, is at the disposal, in off-hours, of any members of the community who wish to thresh out issues pertaining to civic improvement or other phases of the community's life. As students of all classes from the kindergarten through the high school grades are housed in the same building, it will be seen that any given school at Gary actively symbolizes almost the entire range of interests of the whole city.

Mr. Shaw has said, "Those who can, do; those who can't, teach." By this token, we may conclude that there is very little teaching, at least of the old-fashioned sort, at Gary. Teachers, it appears, are to a large extent merely helpers; even the little children in the kindergarten are doing all manner of things. Yet no one should fancy that this emphasis put upon doing implies an absorption in the present. Ancient history and ancient languages are taught; only they are not studied for the discipline

which has usually been held to be their main value, but for the service which they render here and now. So I am told that the value of Latin is graphically set forth on bulletin boards. One series of ingenious lessons has to do with the planning of cities, starting with Athens and including Rome, mediæval England and the Continent, South America, Modern Europe, and America. The comparison is vitalized by contrasting other places, ancient and modern, with the site of Gary. Through its great diversity of interests, the system at Gary is enabled to illustrate the bearings on actual life of whatever subject is studied. If it is mechanics, the numerous workshops are there for the purpose. If it is mathematics or drawing, the students have a chance to apply their learning by making the specifications for the various renovations which are often necessary. They have experience in accounting by managing for a certain period the school store. They decorate the rooms, make desks and benches, learn history by constructing maps, and, owing to the absence of any sharp lines of demarcation among the grades (thus small children are helpers to older children and constantly moving about in shops and laboratories), the students are supposed to discover not only that all knowledge can be applied, but that its various branches are clearly correlated.

One of the great merits of the Gary system, especially for overcrowded centres, is the economy with which it can accommodate a large number of pupils. The appeal on this side is so strong that it is likely to be installed in many parts of the country unless large flaws on the educational side can be discovered. The defects of other systems are admittedly serious. The cultural system, which was good in itself, has been largely vitiated by the continual addition to the curricula of "practical" courses. Whereas at Gary it is said that no subject of knowledge is regarded in itself as superior to any other, in most public schools utilitarian courses have a lure which book-learning pure and simple cannot hope for. The Gary system possesses the advantage of having reorganized knowledge consistently from one point of view, which is that all knowledge can be shown to be vital, since it can be applied. One can easily understand what it means to ambitious children of the poor and to their parents to be set in a community which is Argus-eyed and where every eye has a hand to do its bidding. It is not difficult to see how by such means an intellectual curiosity can be created com-

parable to a small boy's interest in the workings of a country blacksmith shop. For Gary is not an industrial school in the sense of directing a given student to a definite vocation, and hence constraining interest at too early an age, the idea being to prepare him for any one of a number of vocations. During much the greater part of his career a student at Gary watches and participates in the great, broad spectacle of applied knowledge; it is only in the later of the high school grades that he may concentrate severely. "The Gary curriculum," says Mr. Bourne, "seems to represent a determined effort to break down the distinction between the 'utilitarian' and the 'cultural.'"

One of the serious conditions with which the Gary system attempts to cope is that illustrated by the fact that "of the children who begin the American public school, only one-fifth ever reach even the first year of high school." The feeling is that the other four-fifths should receive a more fundamental as well as a broader training than that provided by the primary and grammar grades. As the great majority of these unfortunates will soon enter industrial life, Gary tries also to inculcate into them a certain amount of Yankee resourcefulness and self-reliance. In Gary itself, as in the case in New York city, the problem is sharpened by the presence of many pupils either foreign-born or the children of foreign-born parents, and it is believed that the system is in itself a real melting-pot.

To this extent at least Gary has been eminently successful. Whether taken as a whole it is the best system which can be devised for this country is another question. One cannot read Mr. Bourne's book or the chapters on Gary by Professor Dewey, of whom Superintendent Wirt was formerly a pupil without sensing some speciousness. Mr. Bourne says: "Studies are taught also with as much bearing as possible on the social activities of the larger city community. The subject matter in the history and geography classes is really 'The Sociological World We Live In,' and textbooks, histories, atlases, globes, newspapers, and magazines become the reference sources and the materials for understanding that world." "Sociological" is a word to conjure with these days; it is also a very tricky word, and will remain so just so long as sociology is made to include nearly every human activity under the sun. And it is beyond question that no little mischief is done to boys and girls by teachers not competent to generalize about society. Herein lies the crux

of the whole matter. Gary will not be strictly utilitarian; it will not be cultural in the sense of being bookish. Yet to fuse the two requires a teacher of marked talent. Now I am told that the teachers at Gary are not chosen for exceptional ability; the educational machinery of the plant is said to be so carefully thought out that even mediocre instructors can keep it running. Many are bound to doubt this. Children cannot with profit teach themselves sociology, a subject which can be taught only by a person possessed of mature common sense. And this criticism will hold for many other subjects in the case of which the attempt is made to apply theory to life. Admitting that a great genius could extract from the system at Gary revolutionary benefits, the question remains whether the danger of hasty application is sufficiently avoided. The system is confronted by the following dilemma. By attempting to be both cultural and utilitarian, it may furnish students with thumb-screw theories; that is to say, it may give the impression that there are no bridgeless gulfs between theory and practice. Or by avoiding altogether the spheres where theory and practice do not coincide, it will become strictly utilitarian in spite of itself.

One cannot be sure that a proper function of education is not to dwell more on theory than on practice. Nor can one be sure that the mind is not better helped to right ways of thinking by drill in mere book-learning than it is by constant illustration from everyday life. By the latter process, learning can, it is true, be vitalized; but if it thus contains grievous errors, its very vividness, especially in the minds of the young, makes for long-standing confusion. The human interests of any community are not cold facts which can be sorted out by the amateur. They are a complex of exact science overlaid with generous impulses, personal aspirations and jealousies, and a psychology which only a master can disentangle. Is it desirable that youth should be set to solving the large problems of the country? Is it not better that they should buckle down to the tasks of mental discipline while their minds are in the most formative period?

The question just touched on goes to the heart of the educational systems which have been handed down for centuries. Nor is it difficult to present the merits of the older order. The very retirement from the practical world which children in the past enjoyed gave their subsequent approach to the business of life a freshness which it would be a pity to lose. The schools

at Gary are an almost complete microcosm. Small children go through the motions of their elders in forming committees for civic betterment and all the other pressing problems. The boast is that by the time a student leaves Gary he has already qualified as a real American citizen. It is at least true that life holds no shocks for him, for he has been taught just what to expect. But there is a great danger that worldly-wise products of Gary will be little old men and women before their time. For it stands to reason that the disillusion comes too soon. The period when mental sturdiness should be forming is obviously not the proper time for a youth to ease off his thought so as to adjust it to the various compromises which life requires. Better far that a boy's mind should be rigid than that it should be too flexible.

The Gary system has been thrust to the fore at a critical period in the history of this country, and the very nicety with which it appears to respond to present tendencies should make one the more suspicious of it as a cure-all. At a time when the excesses of the "uplift" movement has resulted in a general letting down of the sense of individual responsibility on the part of the victims of economic pressure, Mr. Wirt proposes a plan in which discipline is almost entirely relaxed. The assumption at Gary is that a child knows better what is good for him than the teacher. He is set tasks in which he is by nature interested. It is the child who virtually educates himself. For his benefit an elaborate machinery is put in motion with which he is supposed to carve out his destiny. Every conceivable device—including an hour each day for "expression," when his inner nature receives free play—is used to keep the pupil's interest from flagging. Interest got by such means seems dearly bought indeed.

The time has come when our cities must decide the question whether it is not premature to set aside the admonition of Bacon, who, writing "Of Parents and Children," said: "And let them [the parents] not too much apply themselves to the disposition of their children, as thinking they will take best to that which they have most mind to." One must judge of children, Professor Dewey to the contrary notwithstanding, by one's self, and every adult knows that there are numerous occasions when he must lash his listlessness into subjection. Only by the hardest sort of self-discipline can an adult sometimes push to completion a task which all along he has known was worth the doing. Can children of themselves be expected to have this persistence?

Not unless human nature can be utterly changed. If this persistence, the willingness to persevere in the face of difficult and unpleasant problems, is not inculcated in childhood, there is little hope for the mental fibre of the future. Hard-mindedness is one of the great needs of the age. Is it reasonable to suppose that it can be produced by a system which is in large measure the outgrowth of kindergarten methods?

A GIRL'S TRADE SCHOOL COURSE IN DRESSMAKING¹

Believing that the Milwaukee Public School of Trades for Girls stands as a representative of what any school system may provide for the girls who do not enter high school, or who leave the grammar grades for various reasons, I am giving a detailed account of one of the courses of study as given at the present time in that school, hoping that it may be helpful to others interested in this line of work. Much that has been written upon vocational work for girls has been put in such general terms that it is difficult to obtain therefrom definite, practical ideas.

The aim of this school is to train the girl for homemaking and for a trade. For homemaking, by teaching her household sanitation through the actual work of caring for a model five-room flat which is a part of the school; by teaching her cooking through the actual planning and preparation of food eaten daily by teachers and pupils; by giving her ideas on furnishing a home through the study of the model flat, and the study of interior decoration in the Art Department. For a trade by giving training in the technique of a given trade, and developing those qualities of character which enable the girl to command a higher wage than the untrained girl in the same line of work. The whole training aims to develop responsibility, adaptability, and, to a certain degree, efficiency.

In this school two trades are taught, dressmaking and millinery. The school is in session five days a week, and eleven months a year. The school hours are from 8:30 a.m. to 4:30 p.m. with one hour for lunch. Five hours are spent in trade, two

¹ By Mary H. Scott, Instructor in Sewing, Milwaukee Public Schools. *Journal of Home Economics*, 7:185-91. April, 1915.

hours in supplemental work. With each course supplemental work is given in academic studies, drawing and design, drafting (dressmaking only), cooking and household arts, and physical training. Two years is the time required by the average girl entering at fourteen to complete the work. Girls taking the dressmaking course spend the entire time in the school; those taking the millinery course spend a year and a half in the school, and must have two successful seasons in trade before graduation.

This article deals only with the course in dressmaking. Before a girl learns dressmaking she must have some knowledge of plain sewing. When a girl selects this trade, she must take the elementary sewing work unless she has had some training in this line before entering. The course in dressmaking as given at the present time is as follows:

I. *Elementary Sewing and Underwear*: Pincushion, sewing bag, apron, towel, nurse's bag or belt, cooking apron (two), drawers, bloomers, corset cover, princess apron, nightgown, small princess slip, large princess slip, petticoat, kimona.

II. *Children's Department*: Rompers, child's first dress, child's second dress, child's third dress, boy's suit, baby's slip, baby's dress, child's lingerie dress.

III. *Cotton Dresses*: Two plain house dresses, two fancy house dresses.

IV. *Waists*: Two middy blouses, four lingerie waists, two tailored waists.

V. *Advanced Dressmaking*: Tight-fitted lining, two silk or wool dresses, two fancy dresses.

VI. *Tailoring*: For personal use, suit, or coat and skirt; for custom work, suit, or coat and skirt.

VII. *Advanced Millinery*: Hat and accessories of ribbon, chiffon, etc.

At the completion of this course, the girl is given an examination which consists of making a child's dress, a simple house dress, a silk or woolen dress, and her graduating dress, entirely upon her own responsibility without the supervision of the teacher. She is usually allowed three weeks in which to complete these garments. In the making of these garments, skill and speed are two most important factors. Accuracy, neatness, judgment, honesty of work, color, and design also are considered.

Throughout the entire course, the girl works part of the time to make garments for her *personal use* and part of the time for

the school. The order work is most important as it is by means of this that the girl has the opportunity of getting experience in handling fine materials as silks, velvets, nets, lace and chiffons.

The teachers of the various departments have been consulted and the consensus of opinion is that the girls should be taught to think quickly, to understand directions, to execute well, and to be reliable.

In the elementary sewing and underwear, class lessons are combined with individual instruction; but a girl's advancement depends solely upon her ability, and application to her work. It seems more profitable in this work to have the girls make a number of simple garments, even if in an imperfect way, than to exact perfect workmanship from beginners, as that is always discouraging to the pupil and often positively harmful. Experience has proved that the teacher in this department should herself first work out the problems by actually making the garment so that she may know the difficulties and how to meet them. Such preparation means economy of effort, saving of time, and better results.

Each department has its own special problems but the methods used are similar, consisting of lecture or demonstration by the teacher and practice by the pupil under supervision.

Very early the girl learns that "a smart effect depends upon workmanship, cut, and material, designed for and adapted to a given personality." Carefulness and neatness in handling material, and proficiency in detail must be emphasized during the entire course, but in the advanced classes the girls must acquire a delicacy of touch that will preserve the crispness and freshness of very fine materials.

The supplemental work is correlated very closely with the trade work in the class room. Simple problems in fractions become concrete when given as tucking problems. Drafting becomes more interesting when the girl can study costumes, and work out her own patterns. The study of color harmony, design, and decoration is very real when applied to stenciling curtains and draperies or embroidering pillow covers, or to costume design and decoration in advanced dressmaking.

The appreciation of color, form, and workmanship can be developed to a large degree, even when natural ability is lacking. To the ambitious girl more difficult problems are given. As far as possible, work is adapted to the ability of the girls. Every

effort is made to develop character and those qualities which make for wholesome and happy life.

The teacher's knowledge of her subject must be such as will command the respect of her pupils. It is in the daily association with the girl that neatness, cleanliness, good taste, obedience, kindness, helpfulness, responsibility, and honor are taught. The teacher's appearance, care of the class room, and her attitude toward her work and her pupils are the silent forces that influence character at this age. A demand has been created for the pupils of the school, and girls who have received this training do command a higher wage than the untrained girl in the same line of work.

The Milwaukee Public School of Trades for Girls is but five years old. During that time the registration has increased from thirty pupils to four hundred. It has now more than one hundred names on the waiting list of applicants for entrance. These facts clearly indicate the need of such a school in Milwaukee.

HOW SHALL INDUSTRIAL EDUCATION BE ORGANIZED TO MEET VARYING COMMUNITY NEEDS¹

No more serious blunder may be made by friends or advocates of industrial education than to champion any one of the various important means of training boys and girls, or young men and young women, for the practical work of life in a too *partisan* way. Modern industry is most complex. American social conditions are extremely varied; and we cannot too often remind ourselves that many different kinds of schools are needed to train all types of young people for the almost infinite variety of useful occupations.

Elementary day vocational schools for young persons below the age of sixteen years, full-time day trade schools for older pupils, half-time and part-time day schools, for which young workers are excused by their employers for a limited number of hours per week, cooperative schools, and corporation schools are

¹ By Arthur L. Williston, Principal, Wentworth Institute, Boston, Mass. National Society for the Promotion of Industrial Education. Proceedings. 1914:1-7.

all important, and each one of these types has its own place in a comprehensive scheme of industrial education. I trust that no one will infer from what we shall say this afternoon regarding the value and importance of evening industrial schools that we fail to appreciate the work to be done by the various types of day schools.

It is true that the evening school has certain limitations that we should recognize at the outset. Its sessions come at the end of the day's work when the body and mind are likely to be weary. The time available for instruction in any one evening is short, and the number of evenings per week that the school may demand for its work is likewise limited. Furthermore, overtime work in the students' regular employment, change of residence and shifting occupation, ill health, and the natural attraction of legitimate recreation are all likely to interrupt the classes and to decrease the efficiency or retard the progress of the evening school. After all proper allowance has been made for these handicaps and disturbing influences, however, the fact still remains that the evening industrial school is today the largest and most important factor in American industrial education.

We cannot question that the ideal time for industrial education is during daylight hours; but we must face facts, and it is a fact that a practical survey of the conditions surrounding the young people who are to become the skilled workers of this country is convincing that relatively few of the boys or girls who wish to learn a trade or enter a skilled or related technical occupation can make the sacrifice necessary to enter a day trade school. Moreover, to become the skilled and intelligent worker about which this Society hears so much requires *time*. Those who are really to arrive at this destination need help beyond the fourteenth year, and beyond whatever age we may reasonably hope that compulsory education will reach.

The evening, therefore, after the day's work is done is the only time when most young men are free. This time is their own. They may use it for recreation and enjoyment; or, if they are anxious to forge ahead, they may use it for self-improvement and systematic study. Ambition to advance faster than the rank and file of their fellows, or the hope of some position in advance, prompts many to use it in the latter way; and evening school enrollments continue to increase. The total of these enrollments at the present time, I am sure it is entirely safe to say,

far exceeds the total enrollment of all other types of industrial schools added together.

The reports of the United States Commissioner of Education show increases in the total enrollment of evening city schools in the United States of from 203,000 in 1901 to 374,900 in 1910, and to 420,000 in 1912. The Young Men's Christian Association reports an increase in its educational work of from 46,900, five years ago, to 84,500 in 1914. This is practically all in evening classes. These totals and the rate of development which they indicate are most significant and impressive. It is a fact that an increasingly large proportion of the students in evening schools are enrolled in industrial courses or classes that are definitely related in one way or another to vocational needs. In the majority of instances we find the general rule to be true that whenever industry is especially active, evening schools are also flourishing.

In the City of Springfield, Mass., for example, for a number of years past, approximately 30 per cent of all young people between the ages of 15 and 20 years are enrolled in evening schools; and on the average in all cities of Massachusetts, the corresponding figure is over 20 per cent. In New York State the record is almost as good; and in the City of Richmond there is an enrollment in evening classes, your Superintendent tells us, of 3,080 pupils. This corresponds to the equivalent of the enrollment of every boy and girl in the entire population of Richmond for a period of about 1 1-3 years of his or her life.

If then, it is true that evening industrial schools hold such an important place in practical education, it is worth our while this afternoon to study carefully the question of the best way of organizing them to meet the needs of various communities. We have seen that day schools of different kinds are needed to meet the requirements of different groups of persons, and the industrial needs of different localities. We shall find, likewise, that different types of evening schools are also needed. In a twenty minute discussion, it is quite out of the question to describe all the variations in organization and in methods of instruction that are needed to fit all possible circumstances. I can only hope to outline a few essential conditions and point out some of the more marked contrasts.

As we carefully analyze the situation, we shall find that the different types of evening schools tend to divide themselves into

a small number of comparatively well defined groups. Before describing these separate groups, however, I wish first to call attention to a number of the common points that experience has shown to be important in the organization of all types of evening industrial classes; such for example as the idea that has been so splendidly emphasized and given reality throughout the whole of this Convention by the Richmond Survey—the importance of going to industry itself both to ascertain the needs and to obtain the subject matter of instruction; or again, the idea of giving due consideration to the human element in evening industrial schools, for individuals vary in as many ways as industries vary. No two persons are alike and to reach each one effectively, teaching must be adapted to his peculiar needs: it must be both individual and personal.

In turning to the consideration of the contrasts in organization of the different types of industrial courses referred to a moment ago we find *three* of these types:

First, we have the "*long-term single-subject courses*" which may be given in any of the various mechanical trades, or in any of the technical or allied subjects that are naturally related to any kind of industrial activity.

Second, in contrast with these, we have "*short-unit courses*" dealing directly and briefly with a single phase of a worker's needs. These, too, cover a great variety of possible subjects; and they may be planned so as to be separate, or either to follow one another in sequence or be readily combined in groups in other ways.

And third, there are "*composite technical courses*" or technical and trade courses combined, which cover several years of coordinated instruction.

Each of these three types of courses has a distinct and an important field of its own; and each one has a particular group of individuals to which it ministers most efficiently.

The long-term courses are primarily for those who know with a fair degree of accuracy what they want; for those who are not likely to become discouraged by a too early announcement of the length of time that will be required to reach the goal that they seek; and for those who have sufficient *faith* in what the school can do for them to make them willing to pay the price in sacrifice of both time and effort that is necessary to obtain the needed training.

These courses may follow a single subject or a single line of work over a considerable period with a large group of students; or they may start with the large group of men and later differentiate the work into several sub-divisions with smaller groups. The work, too, may be so arranged as to permit students here and there throughout the course to supplement it with related study selected from other courses. The distinguishing feature of the kind of organization that we are now discussing is its *continuity* for the individual student.

In general the type of person for whom such courses may be regarded as being primarily planned is the young fellow who has recently entered into industry and who has not yet found his exact place—the high-grade apprentice boy perhaps, who does not yet know into which department of his trade he will later go—but who is nevertheless ambitious to make the most of his opportunities. He represents a most important group of men, and one that merits the most careful consideration in planning the organization of evening schools.

Time is absolutely essential for producing certain kinds of very valuable results. For such results courses that have continuity are important.

Short-unit courses occupy quite another field. In every large industrial community it will be found that there are many workers who have come to realize the need of taking only the immediate step in front of them and who would be discouraged by anything that appeared to them remote or not of present use. Such workers may be most effectively appealed to by short courses that deal exclusively with the work of the moment, or that lead directly to some practical task in advance but nevertheless not far away.

In extending industrial education into new fields, in trying to make evening schools reach new groups of workers, or in other words in tilling new soil, these short-unit courses are most valuable.

They are valuable, too, in another way: namely, in forcing teachers and administrators to study the subject matter of their courses until they eliminate every last detail that is non-essential, and that does not have a maximum of practical usefulness. They thus force teachers to enrich their instruction, to make it alive, and to bring it close to earth.

The short-unit courses, furthermore, permit a greater flexi-

bility than is possible when the instruction is organized over extended periods of time. They permit intimate study of individual needs, and the selection from a variety of topics of the particular combination of short-unit subjects that will exactly meet each student's individual requirements.

The typical man for whom we may say, perhaps, that such courses are most helpful, is the mature worker whose occupation is more or less thoroughly established, whose vision of his own needs is somewhat limited, whose mind is less flexible than that of the young man described before, but who nevertheless feels the need of definite practical instruction to help him at some point in his regular work. This type of man represents a large percentage of all industrial workers. He should not be overlooked, even though at times it is found difficult to effectively reach him.

If I have accurately analyzed these two types of courses, the long-term and the short-term courses, we shall find that as teachers gain experience in evening school teaching and learn the industrial needs of their communities more accurately, and also as the workers themselves learn to know what the school can do for them and acquire growing faith in its ability to serve them well, gradually short courses will tend to change into longer courses. Persons who have not been students before will gradually become students; more and more workers in the community acquire the "study habit" and the evening habit, and more will come to appreciate the value of continuity in school courses.

On the other hand, if the school organization is alive to its opportunities, new fields will be found opened up in which new short-term courses may be started. This, of course, will not always or necessarily be the case, but the tendency, I believe will be steadily in this direction.

And now we come to the third type, the composite courses, either trade or technical, which include a group of related subjects extending over several years and covering a wider field than either of the two preceding types of courses. This type of course may be regarded as being planned for a group of individuals who because of their superior earnestness and ambition and appreciation of their needs are prepared for a more thorough training than would otherwise be practical.

In a number of schools that have been in the field for a long time, and whose experience therefore is significant, there has

been a distant tendency of courses of this type to develop. Experience shows that industries are constantly changing and that men do not always follow the narrow path that they mark out for themselves. Often it happens that persons who think they know exactly what their future work will be, find themselves, a few years later, in some related field. For such persons, therefore, breadth of industrial training is quite as important as depth of training; and one of the most valuable things that practical education can do is to cultivate the versatility and adaptability that new conditions and new opportunities require. The composite technical or trade courses, because of their length and the variety of subjects that they include may accomplish this more fully and satisfactorily than courses organized in other ways. They, therefore, have an important place, and it would be a mistake to try to substitute other types of evening instruction for them.

VOCATIONAL TRAINING IN CHICAGO SCHOOLS¹

Before we accept the argument for a dual board of control for vocational education we should find out what the schools are actually doing that warrants the charge that they are failing to provide practical education. Chicago can show full-fledged vocational schools, industrial and technical courses, and well-equipped organization for the practical training of youth in the regular routine of high and grammar schools. The cosmopolitan high school, one in which cooking and blacksmithing are given in the same building with Greek and art, is not merely a possibility but a working actuality in this city. A brief summary of conditions will convince anyone that within the last half-dozen years Chicago has been rapidly spreading educational advantages to all classes of people. All of this is being done under the management of a single or unit board of education.

In the first place, the administration has perfected an organization to manage work for vocational and industrial education. One district superintendent gives his entire time to the problem

¹ By John T. McManus, Chicago Normal College. *School Review*. 23:145-58. March, 1915.

of connecting up the schools with industrial needs of the city. Then there are two supervising officers for vocational and technical courses in the high schools, both appointed within the last year or two. In addition to these persons there is a supervisor of household arts and sciences for the schools and a supervisor of industrial work in the grades.

In the second place, the advocates of the dual system of control have argued that the teachers now in the schools are academic and not practical enough to meet the needs of the industrial education of children. They cite the passing of the old manual-training school, which owed its failure partly to the theoretical and academic teachers who took charge of it. Whether this bit of history be true or not as regards manual-training schools, the present vocational schools of Chicago are safe from that danger because they have practical teachers to handle the work in industries and vocations. The following regulations make clear the practice in the city schools. On October 19, 1910, the superintendent of schools reports that

the work of giving technical instruction in the evening schools to young men and women engaged in the industries has been greatly handicapped for want of teachers who have had a trade experience necessary to equip them for giving the proper kind of instruction. Teachers with good technical-school training, but without experience in the industries, may be had, but such are not competent to do the work required because of the lack of actual trade experience. The right kind of teachers is hard to find, and if the superintendent is given authority to employ such persons when found, their services may be made available at once in the evening schools. The superintendent, therefore, recommends that section 118 of the Rules of the Board be suspended, and that authority be granted to the superintendent of schools to issue temporary certificates to graduates of technical schools of good standing who have had the necessary experience in the trades and to employ them as teachers in the evening schools, subject to the approval of the committee and of the Board, such certificates to expire at the end of the school year. The superintendent requests emergency authority to act at once on this matter.

This request was granted.¹ On January 8, 1913,

the superintendent recommends that authority be granted to the superintendent of schools to issue when necessary temporary certificates to men and women with the expert experience that equips them to give practical instruction in their trades, such certificates to expire at the end of the school year; to assign said teachers in the day school, subject to the approval of the Board; and to place said teachers on the regular schedule for

¹ Proceedings of Board, 1910-11, p. 242.

technical teachers in the high school if the assignment be a high school, and on the regular schedule for manual-training or household arts teachers in the elementary school, if the assignment be to an elementary school.¹

At the present time, in the high schools, night schools, and elementary schools, there are many men and women teaching who have had the most complete and successful trade experience in the world of industry. A list of a few of the schools and the courses where teachers of this type are employed will refute the arguments of the advocates of dual control that the schools cannot get "practical" teachers to do the work required and demanded by the business world.

In eight of the high schools of the city there are full four-year courses in technical instruction now in operation. The teachers in these schools are in the majority of cases "practical" men, the others being school men with college training in technical subjects but no trade experience.

Crane Technical High School

Woodwork.....	3 practical men (from the trades)
Woodwork.....	5 college-trained men (no trade experience)
Foundry.....	2 practical men
Forge.....	2 practical men
Machine shop.....	2 practical men
Electrical.....	1 practical man
Electrical.....	1 with some practical experience

Lane Technical High School

Woodwork.....	2 practical men
Woodwork.....	5 college-trained men
Foundry.....	1 practical man
Forge.....	2 practical men
Machine shop.....	3 practical men
Electrical.....	1 practical man
Electrical.....	1 college-trained man

Lake Technical High School

Woodwork.....	2 practical men
Woodwork.....	1 college-trained man
Foundry.....	1 practical man
Forge.....	1 mechanic
Machine shop.....	1 practical man

Bowen High School has all practical men in shop and foundry.

Schurz High School has three practical men and one man without trade experience in its shops.

Senn High School has two practical men and three college mechanics.

Hyde Park High School has all practical men in its shops.

Harrison Technical High School has all practical men in shop and foundry.

¹ Proceedings of Board, 1912-13, p. 659.

The above list of eight high schools does not contain all of the men in technical work now employed in the various schools of the city, but it gives an idea of the extent to which men with trade experience have been brought into the work of teaching.

In the commercial courses and the courses for girls there exists the same proportion of teachers with actual commercial and trade experience as shown in the technical courses.¹ Work in accounting and stenography and office preparation is carried on by students under teachers directly from offices and commercial employments. Women with experience as milliners, dressmakers, managers of dining-rooms, and shop workers are in many cases in charge of classes in the Flower Technical School for girls and other high schools of the city.

The night-school classes are taught in a majority of cases by men and women with trade experience. Such courses as sewing, and dressmaking, millinery, bookkeeping, stenography, chemistry, electricity, mechanical drawing, freehand drawing, printing, and agriculture are in the hands of teachers who know their jobs by actual experience.

There is absolutely no excuse, so far as getting practical trade people to teach, for a dual control of our schools. Chicago can show this class of teachers in all of her high schools. Of course the difficulty of getting a man or woman experienced in the industries and at the same time a competent instructor of boys and girls is felt now, but would in no way be lessened by a dual system. It is recognized in the schools now, where such persons have been taken in from the trades, that not all of them will ever become first-class teachers, but the vast majority of them soon learn through association with the regular academic teachers how to do the work. It is this sort of association between the two types of teachers that will make possible the success of the work of each class, and a dual system would therefore defeat the end of good teaching.

If we turn now to the courses offered in the city schools for vocational and industrial training, we are struck by the rapidity with which this work has been taken over into the regular school curriculum and made an organic part of the schools. People who wish to establish vocational schools, *in addition to* the schools

¹ Of the 37 teachers of stenography, bookkeeping, commercial law, and commercial geography who entered the day schools during the past year, 26 came direct from the business world; the others had been teachers of commercial subjects in other schools. In the commercial department of the evening schools, 40 teachers with practical experience were added.

already in operation, must be blind to the fact that such schools are already working very efficiently now under the unit management. Notice the various branches now in operation:

1. Industrial centers in 20 elementary schools. (There would have been 46 of this type of school this year if money had been available.) In these schools children in the upper grades—the sixth, seventh, and eighth—are furnished opportunity to enter upon vocational training.

2. Prevocational courses in the technical high schools. Here boys and girls over-age but behind in school work are instructed in vocations.

3. Two-year vocational courses in all of the 22 high schools of the city. These courses are eleven in number as follows: accounting, shorthand, mechanical drawing, designing, carpentry, pattern-making, machine shop, electricity, household arts, printing, horticulture. Two or more of these courses are given in all the schools and most of them give practically all such courses.

4. Four-year vocational courses as follows: commercial, office preparatory, technical, general trades, household arts, arts, and architecture. In addition to the regular technical high schools, these courses are given in most of the regular high schools where the general, the science, and the normal preparatory courses are given.

5. Apprenticeship courses in several industries: carpenters, electrical workers, plumbers, machinists, sheet-metal workers.

6. Two-year college course for technical education and engineering.

7. Evening school courses in more than twenty vocational subjects.

A careful study of the following items will show something of the status of vocational education in Chicago:

1. Industrial centers: On May 3, 1911, "the superintendent of schools reports that a division should be made in the elementary course of study at the beginning of the sixth grade for the purpose of providing an industrial and a general course for pupils, each of which will meet the requirements of graduation and entrance to high school."¹

Again on January 24, 1912, the superintendent returns to this subject and reports that

in accordance with this authority, the superintendent, after conference with members of the education department, arranged for two courses of study,

and the new division—the industrial course—was printed with the general course of study, and distributed to all of the schools before the opening of September, 1911, so that teachers and principals might be familiar with the tentative plan proposed. As this is the first arrangement of a course of study along these lines, it has been necessary to give consideration to all the details, and up to the present time it has not been possible to determine whether there will be money available during this year for the two extra teachers of industrial and vocational subjects who will be required in each school in which the new division of the course is introduced. As it now appears that enough money will be available to provide these teachers, and as a number of requests have been received from principals of schools like the Jackson and Von Humboldt, situated in congested districts, for the introduction of a course which will keep pupils longer in school and fit them better for their vocations, the superintendent recommends that authority be given to introduce the new course at the beginning of the new semester, and to assign the two additional teachers at each school selected by the superintendent for the introduction of the course.²

From letters of principals and teachers in these schools we give the following items:

(1) "In two years since opening center, membership in the eighth grade is 86.9, while for two previous years it was 73.1." (2) "While pupils devote only half as much time to academic subjects as formerly, yet they cover the grade work and the results are creditable." (3) "We have better attendance since opening, and children have less desire to go to work." (4) "Attendance in these grades is larger and more regular than ever before." (5) "Pupils over fourteen remain. Mending in the homes is attended to and cooking and housekeeping are done better. Many pupils go to Flower and Lake Technical schools." (6) "Membership is larger than ever in the sixth, seventh, and eighth grades. The children are happy in their work. The joy of doing things with their own hands gives them encouragement that they, too, are *becoming a vital part* of the great world about them." (7) "Attendance 1913 (before opening), 97.16; in 1914 (first year), 97.72; graduates 1913 were 34, in 1914, 47." (8) "This work promotes attendance and pupils will not miss a cooking, sewing, or manual-training class." (9) "An unusual number of girls have gone to work in private families." (10) "Increased attendance—Keeps older boys in school." (11) A decided decrease in the number of work certificates issued to pupils in grades having this work." (12) "Improved attendance." (13) "Fewer boys ask for work certificates and more boys over fourteen in grade than in previous years." (14) "This industrial work has materially affected our attendance. Many more pupils now remain in school until they complete the elementary course. In 1913, before opening this industrial center, 63 pupils were accredited to the high schools. During 1914 we graduated 97 pupils, a gain of 54 per cent in number of pupils completing the grammar grades."

¹ Proceedings of Board, 1910-11, pp. 873-74.

² Proceedings of Board, 1911-12, pp. 523-24.

2. Prevocational figures:

Crane.....	No report	
Flower.....	Cooking and sewing.....	76
Harrison.....	Various lines	35
Lake.....	No report	
Lane.....	Woodworking	48
	Forge	60
	Machine shop	24
	Printing	60
	Foundry	20

Total prevocational reported.....323

For the two-year vocational, the four-year vocational, the two-year college courses, see the following tabulation of the high school work of the city. This tabulation (Table I) was compiled from reports of the principals made in January, 1915, and shows the relative numbers taking the courses offered in the high schools. If one remembers that the two year vocational course was opened in 1910 he may appreciate the rapidity with which it has grown. This growth has not been at the expense of the general course, but indicates an increased number of boys and girls attending high school.

A summary of the commercial work being done in the two-year courses of the high schools of Chicago made in November, 1914, gives the following results:¹

Business English studied by.....	5,352
Stenography studied by.....	4,195
Bookkeeping studied by.....	3,045

making a total of 12,592 enrollments in the classes of the high schools in the two-year studies fitting for offices and clerical work in the city.

Apprentice classes are conducted in the schools at the present time and have enrolled in the different lines of work:

Carpenters	236
Plumbers	174
Electrical workers	83
Machinists	24
Sheet-metal workers (until recently).....	30

Total in attendance..... 547

Classes are to be opened at an early date for printers, bakers, and druggists. Most of this work can be carried on and is being

¹ This summary includes Morgan Park High School.

carried on with the facilities already at hand with perfect ease and effectiveness. The arguments for a dual system that would double the school plants because there were no opportunities for the industrial workers in the present school organization have no validity so far as the apprenticeship courses are concerned, because they have been accommodated from the first and can continue to utilize the present school plant almost indefinitely.¹

In the two-year college engineering course the following work is given. This work has been given in two of the high schools of the city and has been successfully carried on. First year: mathematics, science, English, gymnasium are required, while modern language, shop, science, design are elective. Second year: mathematics, science, English, gymnasium are required, and shop, science, engineering, modern language are elective.

A summary of evening school attendance for November 5, 1914, shows the following work and attendance:

Household courses:		Women	Total
High-school sewing and dressmaking.....	987		987
Elementary sewing	680		680
Millinery	276		276
Cooking, high school	177		177
Cooking, elementary	335		335
Total household courses.....			2,446
	Men	Women	Total
Bookkeeping	767	321	1,088
Stenography	862	1,323	2,185
Special business course.....	213	58	271
Commercial law	91	7	98
Total commercial courses.....			3,639
Industrial subjects:			
Chemistry	188	18	206
Electricity	744	....	744
Woodworking	943	1	984
Pattern-making	84	....	84
Machine shop	305	....	305
Foundry	55	....	55
Forge	201	....	201
Mechanical drawing	1,247	12	1,259
Freehand drawing	95	22	117
Printing	123	....	123
Agriculture	36	4	40
Total industrial subjects.....			4,041
Total household, commercial, and industrial.....			10,126

¹ An advisory board consisting of a member of the union concerned, a member of the employees' association, and a member of the Board of Education plans the course and conduct of the work.

Commercial classes:

Other classes:

English, for foreigners.....	8,809	2,650	11,459
Elementary grade work.....	2,886	994	3,880
Regular high-school subjects.....	1,704	814	2,518
Physical education	264	413	677
Classes for deaf.....	2	9	11
<hr/>			
Total other classes.....			18,545
Grand total, less 295 counted twice.....			28,376
Grand total for first quarter last year.....			21,839

Evening schools have been easily managed by the single or unit system of control and have been extended as rapidly as money was available for them. A dual control would simply add to the expense of the taxpayer by requiring a duplication of building and apparatus for the evening schools where now there is sufficient of both in the regular schools.

It is evident from the growth of vocational and industrial courses in the schools of Chicago that what is needed is more money to foster the work already begun and not an entirely new set of schools.

PROBLEMS OF INDUSTRIAL EDUCATION UNDER PUBLIC ADMINISTRATION¹

However much one may wish to avoid the indelicate reference to the rope in the house of the hangman he is forced to do so unless he would deliberately fail to discuss the subject of control in industrial education. The question is fundamental in any discussion of principles and policies regarding industrial education. The conditions of efficient control must be set up by some agency, whether unit or dual, or by a combination of both.

I have been impressed with the strength of position of each side in the classic controversy now occurring. My own experience leads me to believe that an effective industrial school cannot be organized, established, and placed upon a going basis without the degree of freedom best in promise under the system of dual control. I am also convinced that there is considerable danger in building up two educational authorities such as the

¹ By Frank V. Thompson, Assistant Superintendent of Schools, Boston, Mass. National Society for the Promotion of Industrial Education. Proceedings. 1916:337-46.

dual system threatens; in creating divisive influences that would threaten to separate educational forces into two unco-operative, competing, and hostile camps. The adherents of the dual system have in mind the success of a single type of school; the advocates of the unit system, the permanent good of the educational system. I have sometimes thought that a compromise plan might be possible, namely, the adoption of a temporary dual system during the period of foundation, organization, and experimentation; afterwards, at a stated time, five years as a suggestion, turn the going concern over to the major forces vested with general control of educational affairs. In Boston, there has been much suggestive precedent for this proposal, not in the names unit and dual, but in procedure similar to the idea contained in plans termed unit and dual. Many present endeavors in our schools were originated under private philanthropic, or public-spirited control. This was true with respect to the kindergarten, sewing and cooking, and manual training. The Trade School for Girls was thus founded and operated for some years; vocational guidance and salesmanship are similar instances. Many other cities very likely can point to similar occurrences. The history of the development of industrial education, administered by the state educational authorities of Massachusetts, shows some points of similarity to the experience of Boston. Originally when the active promotion of industrial education was in progress and when the fundamental basis for procedure was being studied there was established an independent industrial educational commission; subsequently the administration of industrial education was placed under the charge of the (reorganized) State Board of Education. The influence and contribution of the original commission were perpetuated both in the procedure transmitted and in the laws incorporated into the statutes relating to industrial education, which provided that approved schools be independent schools.

The factor of independence is the essential condition, as I conceive it, of effective vocational industrial schools. There is possible no easy transition from the general school as now maintained or from the technical high school to a type of effective industrial school. Many communities are still unconvinced of the truth of this proposition and are either trying to effect the impossible end or are proposing to make the attempt. Some of those who have tried and failed have concluded that the trouble

is in the project itself and have not seen that the difficulty was merely in the method used. There is no type of school which is so dependent upon favoring conditions as the industrial school. Conditions must be favorable regarding methods of instruction, qualifications of teachers, size of classes, furnishings and equipment, location of buildings, amount of floor space for pupils, quality and quantity of material. A defect in any one of the above may easily render abortive the proper functioning of the other factors. The figurative illustration of the chain with the weak link becomes literal with respect to the operation of the industrial school. Modern productive plants show the same situation—each worker on the complicated product must perform his operation correctly or else the finished product is worthless; in fact, the product becomes worthless at the point of the first mistake because the succeeding operations are wholly conditioned upon the accuracy of the former operations. It is not strange, consequently, that an effective industrial school should show the same sensitiveness to conditions which characterize the highly organized industries for which it is preparing young persons to enter. Our general schools are not adjusted to measurements of millimeter exactness; but they are adjusted to variations of far more generous margins. The point of view of the general school through precedent, circumstance and superimposed restrictions shows of necessity compromise, approximation and variable standards. The general school has justly won commendation for its achievements in view of hampering conditions. Its function has been general and it has been generally successful. The general school cannot, however, "by taking thought, add a cubit to its height." It cannot assume a new, technical and highly specialized function and be successful, for it lacks the proper point of view, the necessary resources and an adequate background. There are impractical idealists who believe that we can over night raise a million men who can protect our liberties against the onslaughts of technically trained and well disciplined troops of possible aggressors; but the wisdom and judgment of our experts on these matters indicate that the plan of the idealist is futile, that we must technically train and equip our defenders by special methods and under the direction of skilled and experienced instructors. Our general schools in many sections of the country are playing the part of the generous and patriotic volunteer in industrial education, but the task,

again, is too technical and specialized for their recognizably good intentions.

Let us proceed to discuss the positive and constructive side of the question. How may we effectively meet some of the problems of industrial education? First, there is the problem of teachers. Proper teachers at present do not exist so we must undertake to create them. The conclusion that suitable teachers for industrial schools are at present non-existent is based upon certain assumptions regarding the qualifications of teachers in industrial schools. The general principles underlying these assumptions were well stated at the seventh annual meeting (Grand Rapids) of the National Society for the Promotion of Industrial Education. Teachers in industrial schools must possess primarily a generous background of industrial experience. Expertness in the art of teaching is likewise desirable, but if we must sacrifice, temporarily, one or the other the second qualification is the less important. If faced with the dilemma it is more reasonable to conclude that the worker in industry can impart the knowledge of his craft, than that the teacher who knows how to teach them can teach what he does not know. The acquisition of the art of teaching is far easier than the knowledge of what to teach. We proceed upon this same assumption with regard to teachers in our regular schools. An analysis of the amount of time devoted to what to teach and how to teach will show a like relative proportion of knowledge of subject matter and technique in the art of teaching. The normal school student has devoted already twelve or more years to the study of what to teach before he spends his two or more years in the study of how to teach. The long preliminary period constitutes for the normal school student a proper prevocational or experience background for teaching in the regular schools, but not so for the teachers in the industrial school, since the former has in view instruction in the regular school, but the latter must train young people for a wholly different environment.

If we could imagine a situation where a candidate for teaching in the regular schools had spent his preparatory years in industry and then by means of a short period of training in the technique of teaching assume the function of teacher in a regular school, we should have a condition no less absurd than the attempt to convert a regular teacher into an industrial teacher by means of a short term experience in industry. We must apply

the same logic to the industrial school that we apply to the regular school. The best background for each kind of teacher is found in the appropriate experiences which each will find in his own field—the regular teacher in the domain of the regular school; the industrial teacher in organized and competitive industry. We must go to industry consequently for our industrial teachers. Industry will give the proper experience and point of view. But we must add to the fundamental background technique in the art of teaching. The effective industrial teacher ought to know two trades, the trade which he is to teach, and the trade of teaching that which he knows.

There do not exist today, obviously, the resources or institutions, except in isolated instances, for training persons skilled in trades in the art of teaching. Nor can we meet the problem by simply adding industrial training courses in our already established normal schools. The skilled worker whom we wish for our industrial teacher is not financially independent so that he can dispense with his wages during the period that a normal training requires. What can be done is more difficult to define than what can't be done. The city of Boston with the assistance of the state educational authorities is attempting to meet the two conditions deemed essential for proper trade instructions by the following plan.

Regarding the qualifications of trade experience, any one of three requirements is demanded.

- (a) Eight years' experience in industry, three years' apprenticeship or equivalent and one year of foremanship or equivalent—and academic accomplishment that of the elementary school or equivalent.
- (b) Five years' experience in industry, one year of which spent in foremanship or equivalent and academic accomplishment that of the high school or equivalent.
- (c) Three years in industry, one year of which spent in foremanship or equivalent and academic accomplishment that of the higher technical school or equivalent.

No candidates to the qualifying examinations for positions as teachers in industrial schools are admitted unless they shall have successfully pursued an approved course of training for teachers in industrial schools. Such a course has been conducted during the past two years by the state educational department. The course is conducted two evenings a week for a period

of twenty weeks by instructors representing both the city and the state. Instruction in the technique of teaching as well as in trade processes are continued in the school for teachers already employed. Thus both preparatory training and improvement training are attempted in the plan under operation. It is evident that only in improvement training can our industrial teachers reach the stage of development in the technique of teaching which our graduates of normal schools possess in the regular schools. Our pedagogical convictions regarding all kinds of effective teaching are leading us more and more to see the importance of improvement training in all grades of schools; and in this matter our industrial schools may possess equal advantage with all other types of schools.

It is my conviction that city and state administrative authorities having charge of industrial education may devote themselves energetically and hopefully to the matter of improvement training of teachers already employed in industrial schools. Teachers in our regular schools are made effective largely upon the basis of experience in the class room. Timely guidance, suggestion at the time of need, appreciation of problems actually encountered are essential elements in the attainment of power in teaching of whatever character. Preliminary instruction for industrial teachers is necessary, however, but it is chiefly useful as an eliminating factor. The preliminary course will discover the person with aptitudes and tastes for the work. The preliminary course, indeed, is largely prevocational enabling individuals to determine their fitness for the work. The real vocational work of teaching is reached only under the conditions of actual performance.

The conditions of work to which the industrial school are sensitive have been enumerated. The selection and training of teachers, organization, floor space per pupil, materials and product, equipment, methods of instruction, type of school, are all elements of vital importance in the success of any kind of industrial school, but the limits of this paper do not permit to each topic the detailed discussion which has been attempted with regard to the selection and training of teachers. Growing experience is creating an accumulation of evidence and conclusion upon all these important matters and the administrator charged with responsibility for industrial education will do well to acquaint himself with the material so rapidly becoming available.

The question of proper types of schools which shall furnish industrial education has been considered of prime importance by the National Society and rightly so. As a general statement it is safe to say that cities of the first rank in size need all types of schools, chiefly as a means of experimentation at present to see through a fair competition of types which kind should be expanded or multiplied to meet major needs. The city of Boston has one or more schools of the following types: Prevocational schools for boys and girls of twelve years of age and over—in the elementary school stage of instruction; day trade schools (separate) for boys and girls fourteen years of age and over; continuation schools—with prevocational programs—for working boys and girls between fourteen and sixteen years of age; co-operative industrial courses, in general high schools following the usual plan of alternate weeks in shop and school; evening classes for men and women regularly employed in industrial occupations. We have not the type of trade extension continuation school found in Wisconsin by reason of the fact that we have no adequate law under which to operate the schools of this useful character.

What is our experience showing us regarding the relative worth of these different kinds of schools? Chiefly that the schools are not competitive at all, but are supplementary to one another. Even when schools receive pupils at the same age one type will meet the needs of certain young people and the other type of school is better suited to boys and girls with other necessities. The day industrial school and the co-operative industrial courses may be taken for contrasted types for brief consideration. The day industrial school has the boy or girl wholly within its control, both for shop practice and for related instruction; while the co-operative course connected with a general high school shares its burden on equal terms with industry. Though each of these two types of schools effects the same end with pupils of the same age and capacities they are both apparently necessary for rendering adequately available opportunities for industrial education. Those who know specifically the conditions in industry regarding apprenticeship or that beginning stage which is akin to it for which there is no recognized name, realize that co-operative relations between shop and school are difficult to establish under the best of conditions and difficult to administer when actually established. If we are to do something

in the way of industrial education without delay and render it available to a considerable number of boys and girls we cannot do it solely on the co-operative method. Ideally considered, the co-operative method seems to be the better plan; it is cheaper in cost of instruction, less expensive in equipment and plant, and pedagogically more sound in that the objective side of the work has a basis which is exact and not imitative. Lacking all these superior advantages the day industrial school is at present the more useful type of school. As apprenticeship or something akin to it comes more and more back into industry, the day industrial school promises to lessen in importance and the co-operative course to gain in the same ratio. As far as we can see, however, from indications at all discoverable the day industrial school should exist as a type; at least, until industry is radically different in character from what it is today. We have, perhaps, over emphasized the needs of industry in our discussions about industrial education. What about the child who wishes to enter industry? Suppose that industry did maintain an apprenticeship system appreciably better than that at present obtaining. Industry under competitive conditions will seek the individual most naturally immediately adaptable and will reject the one who shows initial difficulty but who may under patience and sympathy prove eventually efficient. What agency will deal with the child on the basis of his own needs and aspirations? The child has the right to expect that some agency, social or other, may meet him half way. If democracy of opportunity for the child is to exist in industrial vocations something akin to the day industrial school must be maintained as long as present conditions in industry persist. We may hope, however, that conditions in industry respecting apprenticeship will improve so that the less burdensome type of co-operative school may be substituted, but in the meantime the door of opportunity for the child must be kept open by means of the social agency known as the day industrial school.

A brief experience in Boston with compulsory continuation schools for boys and girls between 14 and 16 years of age is giving interesting information hitherto not realized. After adopting an improved working certificate plan (1913) we found upon appraising results that several formerly undisputed assumptions were not tenable. We found that we had much over-estimated the number of 14-16 children who are working; actually only one-sixth of this group leave school to go to work. An-

other assumption to the effect that children leave school in largest number at the age of 14 proved untrue. We found that children leave in equal numbers at 14, 14½, 15 and 15½. At 16 the greatest number leave school. The effect of the compulsory (optional by cities) continuation school law upon employment has been to decrease the number but slightly. Business and industry in our section of the country for the past ten years have been gradually adjusting to a higher age of employment. Child labor legislation has been a factor in this movement. There are those who predict that the new minimum wage law will have a decided effect in reducing the number of workers between 14 and 16.

The boys and girls in our compulsory continuation schools number roughly about 4,000, and come from about 1,300 different employers. They come from every conceivable source of employment, department stores, factories, printing establishments, messenger offices, and elsewhere. An analysis of the kind of service rendered by these boys and girls in their place of employment shows that it is in reality messenger work of one kind or another. The boys perform this service in larger proportion than the girls—for the girl is employed in productive work at a distinctly younger age than the boy.

Trade extension work for boys and girls in the continuation school is obviously impossible except for the few—mostly girls—because these boys and girls have usually no trade connections. Prevocational work, consequently forms an important part of the program. Through contacts with industry and through guidance on the part of the teachers in the school the young worker may form some adequate notion of what he would like to do when he has reached the age which will enable him to secure employment of progressive trade or business character. The prevocational work of the continuation school may in its later stages approach the border line of trade preparatory instruction, but the time of instruction is too short to permit of definite results of this character. All of the young workers are put into what is called general improvement classes upon entrance into the school, and after periods of from two to six weeks are sent to prevocational or to trade extension classes as their needs demand. Trade preparatory work to pupils in the out-of-work group can be profitably given when limited to one-process work such as simple power machine operating for girls.

General improvement work simply means the three R's of

the grades but motivated so that the boy or girl who failed to respond to this work in the grades may see it in a new light; the work is, furthermore, individualized so that the pupil may realize that we are trying to assist him in his needs and not seeking to make him absorb a course of study. The problem of the continuation school for children between 14 and 16 is far more social in character than industrial; but the continuation school may play an important part in the general problem of adjustment of the young person to industry. The conditions of success for continuation schools are fully as critical as for industrial schools, but, here, a different set of causes obtain. The main factors must be given great attention in establishing continuation schools. One of these is the working child himself, and the other is the social and industrial environment into which the working child has suddenly been projected. Our regular schools will not be successful in an attempt to undertake this work without far-reaching readjustments. The working child has more often than not left the regular school because of his failure to respond to the methods and resources there obtaining. The size of divisions, elasticity of programs, specially selected and instructed teachers, expert and competent directors are essential elements for a successful undertaking of the work of continuation schools. In Boston, teachers of prevocational and industrial work are chosen by the same method as are teachers in industrial schools. Teachers of non-vocational work are chosen from the regular day schools, but they are selected on the basis of special fitness and are given training in the theory and practice of continuation school instruction for a period of one year preceding the assumption of the new duties incident to continuation school instruction.

At whatever angle we view our complex and rather unstable social structure to-day we see in prospect, change, adjustment and new conditions. Not one of our social forces toward which human hopes and fears turn but is face to face with a problem of stress and effort. The question of industrial education is simply one of the many and gigantic problems demanding prompt and courageous endeavor. In an era of preparedness—not only military but industrial and social—those of us who serve in the seemingly unmilitary side of activity have a place and importance in survival and supremacy no less essential than those who march in serried tread and bear the glittering weapons symbolizing national security and might.

VOCATIONAL EDUCATION¹

To many of us the questions of the so-called dual or unit control are not fundamental at all. The fundamental questions are, first, as to what constitutes sound pedagogic theories as to the aims and methods suited to vocational education in schools, and secondly, the most effective organization and administration of the means designed to realize them. There are fewer mysterious and uncertain features in vocational education, whether carried on by school or by other agencies, when such education is rightly interpreted and defined, than in the fields of the so-called general or liberal education. Vocational education—not as carried on in schools, of course—is the oldest as well as even yet the most widely distributed form of education of all, since all grown men and women have always had vocations for which, with some measure of purposiveness, they have been trained in the home, the field, the workshop, the commercial establishment or on shipboard. Vocational education is, irreducibly and without unnecessary mystification, education for the pursuit of an occupation. In all stages of social development men have always sought, with more or less conscious method, to train their youth efficiently to follow a vocation—to hunt, fight, fish, farm, work metals, weave, bake, trade, transport, teach, heal, lead in worship or to govern. Vocational education is not all of education—never was that fact more clearly recognized than to-day; but vocational education at the right time and of the right kind is supremely important—and of that fact we have recently been in danger of losing sight. Hence questions as to what constitutes right vocational education, when and by whom it shall be given, and how it shall be effectively correlated with other forms of education, are just now of the greatest importance.

It has long been recognized that vocational education for many of the leading callings could no longer be successfully carried on by the historic methods of apprenticeship. Hence have appeared in succession vocational schools for the training of lawyers, theologians, military leaders, physicians, pharmacists, dentists, teachers, engineers, navigators, accountants, architects, telegraphers, stenographers and many others. Vocational schools for delin-

¹ From Comment on John Dewey's article, by David Snedden. *New Republic*. 3:40-2. May 15, 1915.

quents and for children without homes were organized many years ago by philanthropists. More recently the state itself has entered this field. In many of our cities far-sighted men have been active in establishing vocational trade schools as a means of extending educational opportunities.

Now, many of us have been forced, and often reluctantly, to the conclusion that if we are to have vocational education for the rank and file of our youth as well as for the favored classes, we shall be obliged to provide special vocational schools for this purpose, because the historic agencies of apprenticeship training have in most cases become less rather than more effective as means of sound vocational education. A few industries are indeed still so organized as to be able to give good vocational education, and it may be that as a result of movements now taking place others will readjust themselves so that in them workers can be assured of progressive development of their capacities.

But in general, modern economic conditions are such as to impair rather than enhance the capacity of employers to give satisfactory vocational training. The mobility of labor has enormously increased in the western world, and more particularly in America. Competition among the various units of a given industry has, with rare exceptions, become keener, and the success of a given employer is often dependent upon his ability to attract immigrant labor or to lure skilled workmen away from his competitors. American manufacturers have long been accustomed to await a supply of foremen and competent workmen from European countries. Western railroads by paying higher wages attract firemen, engineers and mechanics away from Eastern roads. The city employer tempts country-trained hands.

There are some indications that a wise cooperation among employers, now beginning to be manifested in certain fields, will soon remedy this condition of affairs. Already the printers of America have joined forces to establish vocational schools for their apprentices. Railroads are stealing workmen from each other far less than formerly, and some of them now systematically train their own workmen. A few large manufacturers have established successful schools for machinists. But it is not yet clear just how far this movement can be carried, in view of the competitive conditions still persisting in such fields as the building trades, the manufacture of textiles, the food-packing industries and numer-

ous smaller lines of manufacture. It is hardly to be expected that government can effectively force all employers to cooperate in the important function of training workers.

The function of the state in this as in other fields of education is clear. The state should consider the good of the individual and the needs of society, and where private agencies cannot accomplish a desired end the collective action of the state must be enlisted for this purpose. This is fundamentally the reason why the various commonwealths of the United States now, in greater or less degree, assist such special forms of vocational education as engineering, agriculture and even law and medicine. Massachusetts, usually conservative as regards state support of higher schools, nevertheless maintains a free agricultural college, makes large contributions towards engineering education, and supports three schools designed for the training of leaders in the textile industries.

In the light of recent experience it cannot be successfully contended that the state is unable to establish and maintain successful vocational schools for the various trades, for farming, for home-making, and for the different commercial pursuits. The pedagogic problems to be encountered are doubtless many and difficult and are made doubly so by the academic prepossessions of the men who are likely to be put in charge of these vocational schools. It is not yet clear how economically state-supported vocational education can be administered, nor is it in every case demonstrated that it is expedient, as a matter of social policy, to have the state or the nation support such schools. But the time has passed when the feasibility of such training could be questioned.

When and under what conditions a youth should be permitted to enter a vocational school is yet debatable. In Massachusetts the law carefully provides that a youth shall be eligible to enter a vocational school only at the time when he is equally eligible to leave the regular public schools and to become a factory or farm hand. The administrative theory under which Massachusetts vocational schools are being conducted assumes that the youth ready to embark on wage-earning who instead turns aside for a period in a vocational school, should be able to concentrate his efforts largely in learning the occupation selected. It is not desirable to blend so-called liberal and vocational edu-

cation at this period, it being always within the possibilities of the youth to continue in the regular or general elementary or high school if he so elects.

It is sometimes asserted that vocational education given by schools under state support is beneficial chiefly to employers. It is incredible that men acquainted with the economic conditions of our time, the competition of employers for labor and the mobility of labor itself, should take this view. In every occupation in the country there is constant competition for superior ability, as is manifested in the varying wage rates usually found. The only sound point of view is to regard vocational education as being primarily of significance to the boys and girls concerned, and ultimately, of course, to society as a whole. If vocational education does not result in greater productive capacity and if greater productive capacity does not result in a larger share to the laborer, then, indeed, are the times very much out of joint.

The question of so-called dual versus unit control is merely one of securing the greatest efficiency. In most states we already have the dual control, if we wish so to style it, of our various special vocational schools of agriculture, industrial training for delinquents, etc. In point of fact there can be no such thing as ultimate dual control of any stated type of school, since administrative bodies must owe their creation to some single state agency, such as the legislature, the governor as authorized by the legislature, or local administrative agencies as created by legislative enactment. Such so-called dual control as one finds in Wisconsin or as it existed in Massachusetts from 1906 to 1910, simply represents an attempt to put in immediate charge of a special form of education a group of persons who are primarily interested in its successful development, and who may be able to bring it to the point of view of practical men in that field. Business men generally are suspicious of the so-called academic mind in connection with vocational education. They feel assured neither of the friendliness nor of the competency of our schoolmasters in developing sound industrial education. For that reason they often favor some form of partially separate control, at least at the outset of any new experiment.

If vocational education is to be successfully established in those states where academic tradition strongly persists, it may prove absolutely essential that some form of separate control should, at least temporarily, be inaugurated with a view to ob-

taining best results. School men, however well-intentioned, are apt to be impractical and to fail to appreciate actual conditions.

Some successful beginnings of vocational education of the kind discussed in this paper have been made in Massachusetts. The present stage of development would not have been reached if it had not been for the activities of the Commission on Industrial Education during the years 1906 to 1910. The ultimate merger of this body with the Board of Education may have represented what should happen in every state after particular forms of development have arrived at some degree of maturity.

CO-OPERATION OF AGENCIES¹

The several studies of vocational education show the need of such training for both boys and girls, while making clear the dangers to be avoided and the way to avoid them. A really successful vocational educational system is possible of attainment only by means of the hearty co-operation of both employers and employees with the public. Employers and employees are the best judges of the kind of industrial instruction needed and whether it can best be given in the public school or in the shop. Such studies as the "Vocational Education Survey" of Richmond, Va., which constitutes Bulletin 162 of the Bureau of Labor Statistics are needed in other cities, to furnish the basis of facts for the right kind of vocational education.

INDUSTRIAL EDUCATION AND THE AMERICAN FEDERATION OF LABOR²

An argument, I take it, is not required of me in support of industrial education, nor any exposition of the purposes or ideals of industrial education. You know what industrial education is and what are its purposes and ideals. The question in your minds is perhaps with reference to myself as a representative of organ-

¹ From "Work of the Federal Bureau of Labor Statistics in Its Relation to the Business of the Country," by Royal Meeker. *Annals of the American Academy*. 63:269. June, 1916.

² By Samuel Gompers. *Manual Training and Vocational Education*. 16: 329-39. February, 1915.

ized labor. Do I know what industrial education is, and what are its purposes and ideals? But as my personal knowledge is of very little consequence to anyone, except as a sort of reflex of the knowledge of the millions of workers, the question is, in fact, does organized labor understand what industrial education is, and what are its purposes and ideals? Finally, if it does understand these purposes and ideals, does it approve of them? And will it cooperate sincerely in the development of tried and proven rational schemes of industrial education?

A great part of my life and energy has been devoted to combating wrong-headed notions about the attitude of organized labor with reference to every sort of social and economic question. These questions have increased in number and in variety with the development of industrial civilization. The need for efficient industrial education for our boys and girls is now more urgent than ever before. Nor is the need of educational training for greater efficiency confined to the factory or the shops; it is manifest in the home life, and in demands for instruction in domestic economy. The factory system and modern industrial organization have resulted in such high specialization that only what have been referred to tonight as the tag-ends of industry have been left to women in the homes, and in modern industrial establishments the subdivision of labor has gone on to such a degree that workers perform the same set task a thousand, or ten thousand, or a hundred thousand times a day. The same task is automatically repeated again and again without knowledge of its relation to the rest of the industry for the sole purpose of gaining time and speed. I repeat that if ever industrial education was essential it is essential today. We cannot turn back the wheels of industry, but we can make the knowledge and the effectiveness of the workers such that they will have some comprehension of the entire article produced and of every branch of the production.

In the work I have sometimes felt that the presumption is always against labor—that it is always assumed as a matter of course that labor is by a sort of “natural depravity” and strange blindness, opposed to everything, including everything that is for its own interest. Sometimes it is assumed that this opposition is due to pernicious temperament on the part of labor leaders, and sometimes that it is due to simple ignorance and incapacity to understand complex social conditions. The workers are essen-

tially honest and sincere, and let me assure you, the degree of their ignorance is not so great as the presumptuous and supercilious often assume it to be.

It may be difficult to cram into twenty minutes' time all that may be necessary to say with reference to the attitude of organized labor toward industrial education, but I shall endeavor to comply with the limit set.

You should know that organized labor does not oppose the development of industrial education in the public schools. Indeed, that would not at all fairly indicate the attitude of organized labor. I say to you that the organizations constituting the American Federation of Labor have been for years engaged in the work of systematically providing industrial education to their members. This instruction has been given thru the medium of the trade union journal and schools established and maintained by them. Organized labor, I repeat, is not opposed to industrial education. It is eager to cooperate actively in instituting industrial education in our public schools. The workingman has too little time, and can therefore take but little interest in any other sort of education.

You will agree with me that there is absolutely no reason why labor, organized or unorganized, should oppose the sort of industrial education proposed here in Richmond, and I can assure you that labor does not oppose anything without good reason. When it has good reason to oppose so many things why should it oppose anything without reason?

Need to Distinguish between Public and Private Interest

Organized labor has opposed and will continue to oppose some enterprises which have been undertaken in the name of industrial education. It has opposed and will continue to oppose the exploitation of the laborer even when the exploitation is done under the name of industrial education. It may continue to regard with indifference, if not with suspicion, some private schemes of industrial education. With regard to such enterprises where they are instituted by employers, organized labor is from Missouri—it will have to be shown that the given enterprise is not a means of exploiting labor—a means of depressing wages by creating an over supply of labor in certain narrow fields of employment.

Organized labor cannot favor any scheme of industrial edu-

cation which is lop-sided—any scheme, that is to say, which will bring trained men into any given trade without regard to the demand for labor in that trade. Industrial education must maintain a fair and proper apportionment of the supply of labor power to the demand for labor power in every line of work. Otherwise its advantages will be entirely neutralised. If, for example, the result of industrial education is to produce in any community a greater number of trained machinists than are needed in the community, those machinists which have been trained cannot derive any benefit from their training, since they will not be able to find employment except at economic disadvantages. Under these conditions industrial education is of no advantage to those who have received it, and it is a distinct injury to the journeymen working at the trade who are subjected to a keen competition artificially produced. Industrial education must reach the needs of the worker as well as the requirements of the employer.

I can see that in some respects the most difficult task before industrial education is that of maintaining an equilibrium of supply and demand of efficient artisans, and equilibrium as nearly perfect as is physically possible. How shall this most difficult problem be solved? How shall such an equilibrium of labor supply and demand be maintained and industrial education be entirely freed from any suspicion of working injury to labor by causing a maladjustment of supply to demand?

The answer to these questions seems obvious. There is in my opinion only one way to avoid the difficulty, only one way in which to avoid the danger of working serious injury to labor—working injury in spite of the very best intentions to benefit labor. The only way to avoid working an injury to labor under the name of industrial education is to find out what is the demand for labor in a community. In a word, it seems to me the only safe basis for understanding industrial education in any community is the basis which, as I understand, has been established here in Richmond.) Industrial education should be in every instance based upon a survey of the industries of the community—upon an accumulation of facts regarding the employments in the community.) Upon such a basis the public schools may properly proceed to provide for the particular industrial needs of the community, and with such an accumulation of data in hand there can be no excuse if industrial education does not prove to be of undoubted benefit to labor and to the community.

Industrial education comes close to the life and happiness of labor. It involves the means of livelihood for the workingman. The test of efficiency of industrial education is wage-earning power—not simply increase in efficiency of labor to produce. It is perfectly possible for industrial education, even when provided by the public schools, if it is not organized with regard to the industrial needs of the community, to increase the productivity and efficiency of certain groups of labor and at the same time to reduce the wage-earning power of the laborer in those groups. There is nothing mysterious in this. It would result from the working of a universal economic law. To the extent that industrial education is not precisely adapted to the needs of the community, it will tend to have exactly this result, namely, it will increase the productive efficiency of certain groups of labor and by bringing into these groups an oversupply of labor will tend to economic deterioration.

I can assure you that no disposition will be found anywhere among workingmen to oppose this effort to make our schools more democratic in serving the real bread-and-butter needs of the community.

Let me tell you further that labor—organized labor—has been active for years to secure this end, active in its efforts to make the public schools do precisely that which some misinformed people even think labor opposes. In 1903 the American Federation of Labor at its annual convention appointed a committee on education. What sort of education interested the delegates of that convention? It was not that education which deals with the syntax of dead languages; it was not even the education which deals with the development of the fine arts, or with the systematic teaching of the science. These are all of them legitimate ends of education and the American Federation of Labor approves of these educational ends, but the sort of education which the American Federation of Labor was particularly interested in, and the sort of education which was under consideration when this committee on education was appointed in 1903, was industrial education. This was more than a decade ago and during the entire period which has elapsed since the appointment of the committee the American Federation of Labor has been active in fostering and furthering every legitimate enterprise for the industrial education of workers.

I will ask Mr. Prosser how long the National Society for the

Promotion for Industrial Education has been working in this field. (Mr. Prosser answered "About eight years.") We have been working for industrial education for more than a decade. This committee appointed in 1903 was to consider what the trade unions themselves could do to make up for the deficiency of the public schools. The trade unions whose members paid taxes to support the public schools were not getting from those schools the sort of education which they needed to enable them to become skilled, efficient, and better paid workingmen.

They were getting, in so far as they got anything at all, a sort of education which had for them very little value, and they therefore took under consideration the possibility of organizing a scheme of education which would be of value to them.

Now when the public schools come forward with a proposition to provide the sort of education needed by the workingmen, do you think that they are going to oppose that undertaking? I do not think so. In fact I know that they will welcome any such development.

Official Action by The Federation.

In 1904 another committee on education was appointed, and again in 1905 another committee, and again in 1906. In 1907 the A. F. of L. at its annual convention resolved that "we do endorse any policy or any society (this I may state included and had special reference to the National Society for the Promotion of Industrial Education) or association, having for its object the raising the standard of industrial education and the teaching of the higher technic of our various industries."

The committee to which this resolution was referred reported it "decided to record itself in favor of the best opportunities for the most complete and best industrial and technical training obtainable," and it recommended an investigation of industrial school systems.

In 1906 the committee on education tested "with satisfaction the splendid progress accomplished by the Executive Council along the lines of industrial education," and submitted to the convention a set of resolutions in which it stated that "industrial education is necessary and inevitable for the progress of an industrial people."

Industrial education was before the convention of 1909, at

which time I myself stated in my report that the A. F. of L. favored public industrial education, and opposed only narrowly specialized training under the control of private interests. Organized labor has always opposed and will continue to oppose sham industrial education, whether at public or private expense. It has opposed and will continue to oppose that superficial training which confers no substantial benefit upon the worker, which does not make him a craftsman, but only an interloper, who may be available in times of crisis, perhaps, as a strike breaker, but not as a trained artisan for industrial service at other times. Industrial education must train men for work not for private and sinister corporation purposes.

I refer to this by way of explaining what it is that has at times in the past aroused labor's opposition to what has been unfairly called industrial education. It will be found that wherever labor has opposed what has been put forth as industrial education, the enterprise called industrial education has been something entirely different from that which Richmond is instituting in its public schools today.

To the 1909 convention of the American Federation of Labor I took pleasure in submitting this: "That since technical education of the workers in trade and industry is a public necessity it should not be a private, but a public function, conducted by the public and the expense involved at public cost." You people in Richmond are doing today precisely what the committee of the A. F. of L. recommended five years ago should be done.

In 1911 the A. F. of L. came forward in support of a bill in Congress providing for national aid in establishing vocational education in the public schools of the country. Since that date up to the present time the A. F. of L. has consistently, persistently, and unremittingly advocated the establishment of industrial education in the public schools.

The sort of industrial education which Richmond is instituting is the one and the only sort of industrial education which can enlist the sincere cooperation of trade unionists and should receive the cooperation of employers as well. It is equally to the interest of the employers as of labor, that workingmen shall be trained for real efficiency. The efficient worker produces more and by virtue of his efficiency makes for a higher economic, industrial, commercial, and social development. I believe that the welfare of labor depends to a very large extent upon the develop-

ment of industrial education, and that in this case at least, the welfare of the employer, and of the community is equally involved with that of the workingman. In the matter of industrial education there is absolutely no controversy between labor and the employers of labor—provided always that the industrial education is what it purports to be—industrial education, organized by the public schools for the benefit of the youth of the community. Organized labor represents the fathers and mothers of the youths, and the fathers and mothers are not going to oppose the best interests of their own children.

Those who wish documentary proof that organized labor has for years been actively agitating for the institution of industrial education in the public schools, I shall be very glad to provide with such proofs. They are spread through the annual reports of every convention held by the A. F. of L. beginning with that of 1903 and including that of 1914. In 1910 the Federation published a preliminary Report on Industrial Education, and in 1912 a full report of its Committee on Industrial Education, approved in conformity with a resolution of the convention held in Denver in 1908.

Education and Industrial Competition.

Let us approach this question from an entirely different angle in order to bring out clearly labor's interest in the development of industrial education.

American industries are producing in competition with the industries established in other countries. In normal times, when these other countries are not engaged in warring upon one another with wonderfully ingenious and effective instruments of wholesale murder, they are none the less strenuously engaged in a warfare of industrial competition. I use the word "warfare" in this connection because no other word seems adequately to sum up the strains and rivalries of industrial competition between nations, but I would not wish you to assume that I think that there is any very close analogy between the conflicts of organized militant wholesale murder and the contests of industrial education. Industrial rivalry is beneficent, not malign; it is a condition of social progress, not of rapine and destruction.

Industrial competition and rivalry is a condition of improving material welfare, and of advancing civilization. In a word,

industrial competition is a warfare of progress, and in this warfare no nation can maintain its industrial supremacy, nor can any nation insure the progressive improvement in the material welfare of its people, which does not adopt the most effective devices of the industrial world struggle.

It is well known to you, who are all of you informed regarding the development of industrial education, that this sort of education has been adopted very generally by those nations with which the people of the United States—the workingman as well as the employer of labor—must compete. Industrial education of the workers, even extending to workers in the unskilled employments, has been, for example, Germany's chief method of industrial conquest. With this means Germany has entered not only foreign markets, but even our own domestic market in many lines. What does that trade mark with which we have all become so familiar in recent years "Made in Germany" mean? It means simply industrial education of the workers of Germany. Largely by virtue of that education, Germany has been able to produce commodities and to place them in our own markets, and in many cases has been able to displace the American product.

This successful competition of Germany does not mean that Germany has depended upon cheap labor to enable her to produce cheaply. We can compete with cheap labor in any line, because cheap labor is in fact, and in the last analysis not cheap labor at all. On the contrary, it is the most expensive and least profitable labor. No community which depends on cheap labor in the sense of underpaid labor can win out in international competition against a nation which depends upon intelligent, thoroly trained labor. Thoroly trained labor produces cheaply not because it is underpaid but because it is efficient. And thoroly trained efficient labor can demand high wages because of its intelligence, efficiency and organization.

Is it not clearly to the interest of the workingmen of the United States that they should be put upon the same level of competition as that occupied by workingmen of foreign countries with whom they must compete? Are not the workingmen vitally interested in maintaining American industries in competition with foreign industries? If these industries decline it is the American workingman who is thrown into the ranks of the unemployed—the American artisan who is depressed into the ranks of the unskilled. In this process the standard of skilled labor is

degraded and unskilled labor is subjected to a new sort of competition which inevitably weakens its condition. The process of industrial progress is reversed. Instead of making the skilled workman more skilled and at the same time lifting the unskilled worker into the ranks of the skilled, the skilled worker is forced down into the congested mass of unskilled labor.

Perhaps, however, even this deterioration of labor is not the chief consideration. No civilized nation can maintain its self-respect on any other basis than that of competing in industrial rivalry on the basis, not of ignorance but of intelligence, on the basis not of cheap labor but of efficient, well trained labor, on the basis not of brute manual labor, but of skill and proficiency.

We do not wish to compete with Europe as the Chinese compete with the whole world. We could not do that and retain our self-respect. We could not do that without adopting Chinese methods of work which would mean a minimum of rest and food, no recreation, and a maximum of hours of labor. If we are not willing to adopt Chinese methods, we must adopt weapons of industrial progress which have enabled European nations to advance in material welfare in competition, not only with the Orient, but more especially in competition with the United States, and with other countries in which have been available as a basis of industrial development vast natural resources. The period is almost past when the United States can depend upon cheap raw materials obtained with comparatively little labor from its mines and virgin fields. It is entering a period when it must depend upon the equalities of human labor. Under these conditions industrial decline is the only alternative to industrial education. Do you think that organized labor is going to advocate a policy of industrial decline—a policy of competing on a basis of cheap labor, instead of trained and efficient labor? Do you think it is going to advocate the adoption of Chinese methods in its competition with Europe? I can assure you that the American workingman will not accept any such solution of the problem. He will insist that competition will not be upon the basis of cheap brute labor, but of efficient intelligent skilled labor, which means that he will in the future, as he has done in the past, insist that the instruction in our public schools be made democratic; in a word that the public schools generally shall institute industrial education, and that that education shall be based upon an exhaustive study of the industries to determine what

sort of industrial training is required and is most conducive to the physical, mental, material, and social welfare of the workers, the community, and that which holds out the best hope for America's workers, her citizenship, the perpetuity of our republic, and fulfilment of its mission as the leader in the humanitarianism of the world.

INDUSTRIAL EDUCATION FOR GIRL'S¹

If we wish to know the special demands of working-women there is no way so certain as to consult the organized women. They alone are at liberty to express their views, while the education they have had in their unions in handling questions vital to their interests as wage-earners, and as leaders of other women, gives clearness and definiteness to the expression of those views.

If organized women can best represent the wage-earners of their sex, we can gain the best collective statement of their wishes through them. At the last convention of the National Women's Trade Union League in June, 1913, the subject of industrial education received very close attention. The importance of continuation schools after wage-earning days have commenced was not overlooked. An abstract of the discussion and the chief resolutions can be found in the issue of *Life and Labor* for August, 1913.

After endorsing the position taken up by the American Federation of Labor, the women went on to urge educational authorities to arm the children, while yet at school, with a knowledge of the state and federal laws enacted for their protection, and asked also "that such a course shall be of a nature to equip the boy and girl with a full sense of his or her responsibility for seeing that the laws are enforced," the reason being that the yearly influx of young boys and girls into the industrial world in entire ignorance of their own state laws is one of the most menacing facts we have to face, as their ignorance and inexperience make exploitation easy, and weaken the force of such protective legislation as we have.

Yet another suggestion was that "no working certificates be

¹ From "Trade Union Woman," by Alice Henry. Copyright 1915, by D. Appleton and Company.

issued to a boy or girl unless he or she has passed a satisfactory examination in the laws which have been enacted by the state for their protection."

In making these claims, organized working-women are keeping themselves well in line with the splendid statement of principles enunciated by that great educator John Dewey:

The ethical responsibility of the school on the social side must be interpreted in the broadest and freest spirit; it is equivalent to that training of the child which will give him such possession of himself that he may take charge of himself; may not only adapt himself to the changes that are going on, but have power to shape and direct them.

When we ask for coeducation on vocational lines, the question is sure to come up: For how long is a girl likely to use her training in a wage-earning occupation? It is continually asserted and assumed she will on the average remain in industry but a few years. The mature woman as a wage-earner, say the woman over twenty-five, we have been pleased to term and to treat as an exception which may be ignored in great general plans. Especially has this been so in laying out schemes for vocational training, and we find the girl being ignored, not only on the usual ground that she is a girl, but for the additional, and not-to-be-questioned reason that it will not pay to give her instruction in any variety of skilled trades, because she will be but a short time in any occupation of the sort. Hence this serves to increase the already undue emphasis placed upon domestic training as all that a girl needs, and all that her parents or the community ought to expect her to have. This is the only one of the many cases when we try to solve our new problems by reasoning based upon conditions that have passed or that are passing away.

In this connection some startling facts have been brought forward by Dr. Leonard P. Ayres in the investigations conducted by him for the Russell Sage Foundation. He tried to find the ages of all the women who are following seven selected occupations in cities of the United States of over 50,000 population. The occupations chosen were those in which the number of women workers exceeds one for every thousand of the population. The number of women covered was 857,743, and is just half of all the women engaged in gainful employment in those cities. The seven occupations listed are housekeeper, nursemaid, laundress, saleswoman, teacher, dressmaker, and servant. No less than forty-four per cent of the housekeepers are between twenty-

five and forty-five. Of dressmakers there are fifty-one per cent between these two ages; of teachers fifty-eight per cent; of laundresses forty-nine per cent, while the one occupation of which a little more than half are under twenty-five years is that of saleswoman, and even here there are barely sixty-one per cent, leaving the still considerable proportion of thirty-nine per cent of saleswomen over the age of twenty-five. It is pretty certain that these mature women have given more than the favorite seven years to their trade. It is to be regretted that the investigation was not made on lines which would have included some of the factory occupations. It is difficult to see why it did not. Under any board classification there must be more garment-workers, for instance, in New York or Chicago, than there are teachers. However, we have reason to be grateful for the fine piece of work which Dr. Ayres has done here.

The *Survey*, in an editorial, also quotes in refutation of the seven-year theory, the findings of the commission which inquired into the pay of teachers in New York. The commissioners found that forty-four per cent of the women teachers in the public schools had been in the service for ten years or more, and that only twenty-five per cent of the men teachers had served as long a term.

It can hardly be doubted that the tendency is towards the lengthening of the wage-earning life of the working-woman. A number of factors affect the situation, about most of which we have yet little definite information. There is first, the gradual passing of the household industries out of the home. Those women, for whom the opportunity to be thus employed no longer is open, tend to take up or to remain longer in wage-earning occupations.

The changing status of the married woman, her increasing economic independence and its bearing upon her economic responsibility, are all facts having an influence upon woman as a wage-earning member of the community, but how, and in what degree, they affect her length of service, is still quite uncertain. It is probable too, that they affect the employment or non-employment of women very differently in different occupations, but how, and in what degree they do so is mere guess-work at present.

If there has ever been voiced a tenderer plea for a universal education that shall pass by no child, boy or girl, than that of

Stitt Wilson, former Socialist Mayor of Berkeley, I do not know it. If there has ever been outlined a finer ideal of an education fitting the child, every child, to take his place and fill his place in the new world opening before him, I have not heard of it. He asks that we should submit ourselves to the leadership of the child—his needs, his capacities, his ideal hungers—and in so doing we shall answer many of the most disturbing and difficult problems that perplex our twentieth century civilization. Even in those states which make the best attempt at educating their children, from three-fourths to nine-tenths, according to the locality, leave the schools at the age of thirteen or fourteen, and the present quality of the education given from the age of twelve to sixteen is neither an enrichment in culture, nor a training for life and livelihood. It is too brief for culture, and is not intended for vocation.

Mr. Wilson makes no compromise with existing conditions; concedes not one point to the second-rate standards that we supinely accept; faces the question of cost, that basic difficulty which most theoretical educators waive aside, and which the public never dreams of trying to meet and overcome. Here are some of his proposals.

The New Education (he writes) will include training and experience in domestic science, cookery and home-making; agriculture and horticulture, pure and applied science, and mechanical and commercial activities with actual production, distribution and exchange of commodities. Such training for three to six millions of both sexes from the age of twelve to twenty-one years will require land, tools, buildings of various types, machinery, factory sites by rail and water, timber, water and power sources.

As all civilization is built upon the back of labor, and as all culture and leisure rests upon labor, and is not possible otherwise, so all cultural and liberal education, as generally understood, shall be sequent to the productive and vocational. The higher intellectual education should grow out of and be earned by productive vocational training.

Hence our schools should be surrounded by lands of the best quality obtainable, plots of 10, 50, 100 and more acres. These lands should be the scene of labor that would be actually productive and not mere play. In such a school the moral elements of labor should be primary, viz.: joy to the producer, through industry and art; perfect honesty in quality of material and character of workmanship; social cooperative, mutualism and fellowship among the workers or students; and last, but not least, justice—that is, the full product of labor being secured to the producer.

He plans to make the schools largely self-supporting, partly through land endowments easier to obtain under the system of taxation of land values that is possibly near at hand in the Golden State, for which primarily the writer is planning. The other source of income would be from the well-directed labor of the students themselves, particularly the older ones. He quotes

Professor Frank Lawrence Glynn, of the Vocational School at Albany, New York, as having found that the average youth can, not by working outside of school hours, but in the actual process of getting his own education, earn two dollars a week and upward. Elsewhere, Mr. Wilson shows that the beginning of such schools are to be found in operation today, in some of the best reform institutions of the country.

TRADE AGREEMENTS AND INDUSTRIAL EDUCATION¹

The term "trade agreement" is applied to all those arrangements under which the conditions of employment are governed by an agreement made between an employer or an association of employers and a union of which the employees are members. Such agreements prevail over a considerable part of American industry. Exactly what part of the workmen are covered by the systems of trade agreements cannot be stated since no census has ever been taken. The nearest approximation is the number of persons who are organized into trade unions. Since the policy of far the larger part of American trade unions is to replace individual bargaining by trade agreements, the number of trade unionists tends to approach the number of those covered by such agreements. But the two are not identical. In the first place, a considerable part of the trade unionists are working in establishments in which the union is not as yet able to establish trade agreements. In some unions the numbers of members so working is very small, so that it may fairly be said that the entire membership is working under joint agreements. In other unions, where, perhaps, a vigilant and hostile employers' association exists, or where a strike has recently been lost with the disorganization of the union as the result, the number of members working under a system of individual bargaining pure and simple may be considerable. On the other hand, in a number of industries and trades where the union shop is not enforced, but where the conditions of employment are set by trade agreement,

¹ By George E. Barnett, Professor of Statistics, Johns Hopkins University. National Society for the Promotion of Industrial Education. Proceedings. 1916:347-61.

the number of trade unionists is less than the number of persons working under trade agreement. A striking illustration of this case is found in the anthracite coal industry. Since 1906 the conditions of employment in this industry have been fixed by agreement between the representatives of the operators and of the workmen who are elected by the union, but at times only a small proportion of the workers covered by the agreement have been members of the union.

It may, therefore, be concluded, that although some joint agreements cover other than trade unionists and although some trade unionists are not working under joint agreements, the overlap in neither case is great. Since also, the two tend to offset each other it may be further concluded that the number of trade unionists is an approximate measure of the number of persons working under trade agreements.

According to the calculations made for the United States Commission on Industrial Relations by Dr. Leo Wolman there were in 1910, 2,116,317 trade unionists in this country. Of these 1,900,000 are in the mining, manufacturing, building and transportation industries. If we exclude from the number of persons gainfully employed in these industries, the proprietary, official and supervisory classes, and persons under twenty-one years of age, the percentage of trade unionists is between twenty and twenty-five per cent. At first thought, the number of trade unionists might appear to be so small as to make the subject of trade agreements in their connection with industrial education one of slight importance. But when the distribution of the trade unionists among the gainfully employed is taken into account, the matter appears in a different light, since the trade unionists are relatively more numerous in those industries and occupations in which the problems of industrial education are more important and more perplexing. For example, according to Dr. Wolman's calculations, the trade unionists in the printing trades constitute 34.3 per cent of all workers 10 years of age and over—certainly not less than 40 per cent of those twenty-one years of age and over.

Even this consideration does not fully sum up the extent of the possible relations between the trade agreement and industrial education since within the groups of trades it is almost uniformly true that the more highly skilled trades are more fully organized. Thus although in the building trades group taken

as a whole only 16.2 per cent of the workers are organized, forty per cent of the bricklayers and stone masons are members of the union of their trade. Similar proportions in the extent of organization between the skilled and unskilled are found in practically all of the other groups of trades. It may be regarded, that trade-unionism and trade agreements prevail far more therefore, as generally true, although with certain exceptions, largely in the skilled trades than in the unskilled. It is equally true that the problems of technical instruction are relatively more important in the same set of trades.

Another consideration that still further magnifies the possible relations between the trade agreement and industrial education is the fact that trade unionists in every trade are more numerous in large than in small places. For example, in 1910, 35 per cent of the compositors, linotypers and type setters in the United States were in the union, but a very much higher percentage of these workmen living in cities of 10,000 population and over were organized. Similarly, although only forty per cent of the bricklayers and masons in the United States were organized in 1910, a far larger part of the bricklayers and masons living in cities of 10,000 population and over were members of the union and were working under trade agreements. Since industrial education in most trades can be organized most efficiently and economically in the larger places, it follows that the importance of the trade agreement in its relation to industrial education is greatly enhanced by the distribution of the trade unionists as between small and large places.

By no means all trade agreements, however, contain provisions concerning the training of workers. The unions may roughly be classified into four groups.

(1) The unions of unskilled workers. No rules regulating the training of new workers are found in the trade agreements in these trades for the very obvious reason that the beginner acquires in a very short time the knowledge necessary for the satisfactory performance of his work.

(2) The unions in those trades in which the "helper" system is recognized as the appropriate method of training new workers. Provision for the training of helpers has been comparatively rare. In the first place, in many trades the helpers have been unorganized and the union of journeymen has not claimed any control over their training. In the second place, in

many trades, the necessary skill of the journeyman can be acquired readily by every helper.

(3) The unions in those trades in which the skill and knowledge necessary for a journeyman is acquired by a workman performing an allied, but distinct kind of labor. In such trades, the two classes of workmen are frequently organized in separate unions, and the more highly trained class of workmen do not as a union concern themselves with the training of the class below them.

(4) The unions in those trades in which the skill of the journeyman is acquired by a considerable period of training in the actual work of the trade. In such unions the recruiting of the trade has been given most attention, and the trade agreements in these trades almost uniformly contain provisions relating to persons who are learning the trade. In these trades a clear distinction is drawn between those who are learning the trade and those who are proficient. Although the learners may not be admitted to the union and ordinarily are not, the union assumes over them a certain authority. The number of such learners is limited, the term they shall serve is prescribed, and, perhaps, the character of their work is regulated by the terms of the agreement made by the union and the employer.

Obviously, a full treatment of the possibilities of trade agreements and industrial education would require discussion of at least three of these classes of unions. For example, where the learner is a helper and is organized in the same union with the journeymen, the union might ask and secure the insertion in its agreement with employers of a provision that helpers should attend courses in a trade school as a condition of promotion to the grade of journeyman. It will be admitted, however, that at the present juncture, these classes of trades are not the most important in their relation to industrial education. I shall, therefore, confine myself to trade agreements in that class of trades in which it is admitted by both parties to the agreement that a lengthy course of training is necessary to acquire proficiency in the trade. Such a class of learners are ordinarily known as apprentices. The economic characteristics of the apprentice are, on the one hand, as distinguishing him from persons preparing to enter less skilled trades, the length of the period of training, and on the other hand, as distinguishing him from the helper, the fact that he is less proficient at the particular work on which he is engaged than a fully trained workman.

Wherever, therefore, apprenticeship, using the word in its broadest sense, exists, the idea of learning is also dominantly present. The helper learns, but learning is not the essence of his employment. He has an independent reason for existence. Even if locomotive engineers were recruited entirely from shop men, there must be firemen. The apprentice, on the other hand, is doing or should be doing, for the greater part of his apprenticeship, work which is identical with that done by the skilled workmen in the same shop.

The greater part of the American trade unions provide in their trade agreements for the regulation of apprenticeship. In 1905 Professor Motley found in his survey of "Apprenticeship in American Trade Unions" that seventy of the one hundred and twenty unions affiliated with the American Federation of Labor had apprenticeship rules: The membership of these unions was 900,000 as against a membership of 750,000 in the unions which did not attempt to maintain apprenticeship systems. I am not acquainted with any more recent attempt to survey the field, but it is certain that the proportion is not greatly different at present.

In the greater part, if not in all of the trades in which apprenticeship remains the recognized method of entrance to the trade, complaints are constantly being made that the apprentice does not thoroughly master the trade. In this company I need only briefly recall to attention the causes of this failure, since the matter has formed the staple of many Surveys. In the first place, with the increasing size of the shop, specialization has become the mark of a well organized plant. The apprentice is, therefore, most conveniently and profitably disposed of by allowing him to follow some one operation. The result is that at the end of his apprenticeship he is proficient in only a small part of the trade. Secondly, with the increasing size of the shop and the high specialization, the apprentice receives little instruction. Thirdly, in a considerable number of trades the advancing technique requires that the apprentice shall have instruction of a kind which can not be furnished in the shop, since the knowledge required can only be gained by formal instruction.

The trade unions and the employers' associations are well aware of these defects in the present system of apprenticeship. No subject is more ardently debated in their annual meetings; their committees of inquiry are constantly reporting on plans for improvement. Until recently the outcome of their deliberations in nearly all the trades concerned was monotonously the same.

On the one side, the trade union was convinced that the real obstacle was that the apprentice was not given an opportunity to learn all the different parts of the trade. The result of this conviction was the insertion in the trade union rules and later in agreements with employers of a more or less detailed scheme of apprentice progression. On the other hand, the employers have been of the opinion that it was important to rouse the sense of responsibility of the individual employer. In more recent years, the unions and employers have become convinced that even the most elaborate schemes of progression, and the keenest interest of some individual employers will fail, in many trades, to secure the proper training of the apprentice. More and more both sides have come to ask whether it will not be necessary to supplement the training of the apprentice either by instruction concurrent with work in an employer's shop or by an initiatory period of full-time instruction.

Since the questions raised are somewhat different, it will be convenient to consider first the case of provision in the trade agreement for supplemental instruction concurrent with work in an employer's shop, e.g. attendance on evening school, part time instruction, and dull season classes. What are the advantages of the trade agreement as a method of securing the addition of training of this kind. There are two other conceivable methods of introducing such supplemental training. The matter may be left to the initiative of the apprentice or to the pressure of the individual employer. The chief advantage of provision in the trade agreement over either of the other methods is that only by trade agreement can the attendance of all apprentices in union shops be secured. Moreover, where the time for instruction is in part or wholly in working hours, it is only by trade agreements that there can be any certainty that all employers covered by the agreement will make the necessary allowances of time. The argument for the compulsory attendance of apprentices rests on much the same basis as the argument for compulsory education. Just as the state requires attendance upon school, so the trade through its organs of government requires that apprentices shall attend evening school or dull-season school. The only force which can thus render supplemental trade education compulsory is the trade agreement. Ordinarily the employer's association acting alone cannot enforce such a rule upon its members. If such education is not compulsory, the usual experience has been that a number

of apprentices will neglect the opportunity and that employers in many cases will not require attendance. There will always be some who contend that the value of instruction is greater when it is sought. When it is remembered that apprentices are ordinarily only from sixteen to twenty years of age, we shall probably not value this argument more highly than we do the argument of those who on similar grounds protest against compulsory education laws.

There is another important advantage in making such supplemental instruction compulsory. In many cases, the employers must either pay part of the cost of instruction or make some readjustment of shop organization which involves expense. It is by no means certain that this expense will be recouped entirely by the improved efficiency of the apprentice during the apprenticeship period. He may be a more proficient journeyman, but the employer cannot be sure of retaining his services as a journeyman. If, however, the rule extends over the trade so that all apprentices are receiving proper supplemental instruction, the employer has the satisfaction of knowing not simply that his apprentices are being taught properly but that the whole body of apprentices is being well taught. Even though his own apprentices leave him when their apprenticeship is completed, he can secure equally well trained men from the general supply. In this as in other matters relating to the instruction of the apprentice, it must be borne in mind that the individual employer, unless working under very exceptional circumstances, cannot be expected to do his part unless other employers are required to do theirs. The instruction of apprentices is a trade matter. It seems useless to attempt to improve conditions merely by appealing to the individual employer's interest in his own apprentices. Why should he bear a burden which should be carried equally by all employers? The only device by which all employers, at least all union employers, can be made to give the necessary instruction is by trade agreement.

A further advantage of supplemental instruction of this kind should be a better formulation and enforcement of the rules for apprentice progression now found in a considerable number of trade agreements. In most trades, it is regarded as necessary that the apprentice should be moved from one position to another in the shop, if he is to develop into a proficient workman. In several, if not all of the trades in which schemes of progres-

sion have been embodied in trade agreements complaint is made that they are not generally enforced. The reason seems to be that the enforcement of such schemes is and must be through shop committees. In some small shops, there are no committees; in others, the committees are lax in insisting on the carrying out of the schemes. Some of this laxity is attributable to the fact that the schemes themselves are only loosely sketched and do not commend themselves to the judgment of the employers and workmen. Moreover, there appears frequently to be objection on the part of the apprentice to being transferred from a process with which he has become familiar to a new one.

Supplemental instruction if made compulsory by trade agreement would necessarily be correlated to some extent with the work of the apprentices. It would follow that pressure of a very persistent and effective kind would be exerted on those employers who failed to afford their apprentices the necessary progression of work. The present decentralized administration of the rule would be supplemented by a centralized oversight through the officers of instruction and the joint committee of employers and workmen in charge of instruction. Moreover, the reluctance of the apprentice to take up new branches of work would disappear if the supplemental instruction inspired him with the ambition to become a proficient and well rounded workman.

Finally, the incorporation of provision for supplemental instruction in trade agreements should react favorably on the character of the instruction. The danger which appears to beset industrial education, perhaps in peculiar degree, is that it may become remote from the needs of the student. Where supplemental instruction is required for every apprentice, the instruction becomes a regular part of the trade equipment. Consequently, the character of the course is constantly under the supervision of the parties to the trade agreement.

There is, apparently, a widespread desire in a number of trades that provision should be made for supplemental, concurrent instruction. It is easy to understand why the trade unions and employers welcome provision for such instruction. The inefficient workman is a heavy charge upon the cost of production. The union as representing the interests of the workmen in the trade not merely in the present but also in the future has the strongest incentive to aid in making provision for increasing the

personal efficiency of its members. It is unnecessary to dilate upon these general advantages, but there is one advantage of such instruction which is peculiar to organized workmen and their employers. Since trade agreements are made by unions and employers of union men, this advantage is important in considering the possibilities of the trade agreement in its relation to industrial education.

The prime purpose of every trade union is to improve the conditions of employment in the trade and chief among the conditions of employment is the rate of wages. The device which the union employs to raise wages is collective bargaining. There are two form of collective bargaining: the union may through its officers assume control of the bargain by which the labor of each of its members is sold and itself make the bargain for the member as an individual contract, or, secondly, the union may fix upon some general rate of wage applicable to all of its members or to a class of its members. It is only in rare cases that the union can apply the first method; it cannot put one price on A and another on B according to some rough measurement of their efficiency. The unions, therefore, set some general or standard rate. In the piece working trades such a standard rate affords a practicable measure of the labor of the members. It is for this reason that the earliest and even yet some of the strongest unions are in the piece-working trades. Piece work in some trades has disadvantages but it has everywhere from the standpoint of the union this one great advantage—every member of the union is equally interested in the standard rate. An increase in the rate goes equally to every workman.

Even among time workers many unions find little or no difficulty in establishing a satisfactory measure for labor. In many unskilled trades, even under individual bargaining, differences in efficiency are so slight that all the workmen engaged are paid at the same rate per day. But this will ordinarily occur only in relatively unskilled employment. In the skilled trades, and it is to be borne in mind that the problem of technical instruction occurs primarily in the skilled trades, the distribution of efficiency is frequently very wide. In such trades, the only standard rate which it is practicable to establish is a minimum. But here a difficulty presents itself. If the minimum is put high a certain part of the workers will be unable to secure the minimum. On the other hand, if the minimum is placed low, it loses

its efficacy as a bargaining device for the labor of a considerable part of the members. What the union actually does in nearly all cases is to put the minimum wage high enough to lend support to the wages of the great mass of its members. What becomes of the inferior workmen when the minimum is placed high? In a few unions where the control of the trade is strong the employer who wishes a man is required to take him from a list on which the men are registered in the order of their falling out of employment. This device keeps in employment the inferior man at a wage much higher than he is relatively entitled to. Failing the adoption of such a "waiting list," the inefficient man either seeks work in a non-union shop or becomes a casual worker in the union shops. Taken on in busy seasons, he is discharged as soon as a more efficient man can be found. In either case, he becomes a serious problem for the union.

Inefficiency is chargeable to a variety of causes, but two stand out prominently—natural incapacity for the trade and lack of proper training. The establishment by joint trade agreement of a system of compulsory supplemental training would greatly reduce in every skilled trade the number of inefficient. In the first place, those who were by natural incapacity unfit for the trade would be excluded to an extent which is now impracticable. In many trades, the agreements now provide for a probationary period. If after three or six months the apprentice is found to be unsuited to the trade, he is to be excluded. These rules have not been found to work well. The administration is in the hands of the shop committee and as has been noted above this form of administration is ineffective. Moreover, the work of the apprentice in his first few months of shop work is not ordinarily of such a kind as to afford an adequate test of his capacity. It may be expected that where compulsory supplemental training is instituted a conference will be held by the employer, the shop committee and the instructors as to the capacity of the apprentice at the end of the probationary period. The supplemental work may during the probationary period be directed especially to testing the capacity of the youth. In the second place, the improved training would reduce the number of those who are inefficient because they lack proper grounding in the elements of the trade. There would still be differences in efficiency due to differences in capacity, but the spread of the efficiency distribution would be greatly narrowed and the problem of organizing the trade would be enormously lessened.

If we turn now from supplemental, concurrent instruction to initiatory and preparatory instruction, the use of the trade agreement up to the present has been less frequent. There are four reasons advanced for making such instruction a part of the training of the apprentice:

(1) The trade as practised in all except the smallest shops is split up into a number of specialties. If the apprentice is to receive a grounding in the trade as a whole, this must be given him apart from the actual work of industry.

(2) In a number of trades, the age at which the apprentice can begin work is higher than the age at which many pupils leave school. As a result, apprenticeship does not follow immediately upon schooling. The two or three years spent in juvenile employment leaves the youth on entering the trade less receptive to formal instruction than he would have been at the time he left school.

(3) Even if the apprentice remains in school until the time of actually beginning his apprenticeship, it is felt that the last year or two of his school life can most profitably be spent in preparing for his trade career.

(4) The reluctance of many employers to take apprentices is due to the fact that their work in the earlier part of their apprenticeship is unprofitable. If the apprentice had the training of an initiatory year or two years he would be capable of earning his wage, and employers would be willing to have apprentices.

Naturally these factors vary in importance in different trades, but it appears to be generally admitted that in certain trades an initiatory period of instruction is desirable. The question then emerges how far the trade acting through a trade agreement will be willing to offer inducements to the apprentice to pass through this initiatory period. Three forms of encouragement are suggested: (1) It may be provided that youths who have passed through the initiatory period shall receive a wage equal to or higher than that they would have received if they had come up through the shop. (2) It may be provided that the employers shall give the preference to such youths when taking on apprentices. (3) It may be provided that the time of apprenticeship shall be shortened by an allowance for the time spent in the preparatory trade school.

The advantages of the initiatory period of instruction are of much the same kind as those enumerated above as attaching to supplemental concurrent instruction. The standardization of

the workman through better training and the elimination of those unsuited to the trade would be attained in even higher degree. Moreover, the inducements which it is proposed to hold out to youths in order to induce them to follow the initiatory course of instruction appear unobjectionable. In a small but dwindling number of trades the ancient right of a father to apprentice a son to his own trade still persists. The provision that youths who have taken the initiatory course should have preference for apprenticeship conflicts with that right, but patrimonial apprenticeship has fallen so much into disuse that no great objection is likely to be made on that score.

The difficulty lies not in the character of the concessions necessary to secure the attendance of youths in the initiatory school, but in the fear that an attempt is being made to replace apprenticeship as the method of entrance to the trade. The union and to some extent the employers may ask whether the training afforded by the period of initiatory instruction will serve not simply as supplementary to apprenticeship, but also as an entirely new means of entrance to the trade. The reluctance to relinquish apprenticeship is not confined to the unions. In a recent report of the Commission on Vocational Training of the International Typographical Union, Dr. F. W. Hamilton, national apprentice director of the United Typothetae of America, is quoted as writing:

We have endeavored wherever possible to spread sound ideas as to the principles and methods of industrial education, urging everywhere the establishment of continuation work for printers' apprentices in the public schools and discouraging in so far as we were able to do so the establishment of vocational schools of printing in the public schools. In cases where such work was well established in the public schools and changes did not seem practicable, we have endeavored to put the schools in such relations to the industry that the work should be done in the most workmanlike manner possible and that an easy way should be provided for the boys who have done well in the schools to find proper places in the shops. . . . It [The Typothetae Committee] holds that it is the business of the industry (1) to select the boy, (2) to see about his training. It sees no other way in which a proper adjustment may be made between the boys who are being trained and the industry itself so that the number of boys who are being trained shall not exceed the number who can find employment in the industry. . . . A method which begins with the boy irrespective of the industry, attempts to teach him printing and then leaves him to find a place if he can is fair neither to the boy, to the public, nor to the industry itself.

In the same letter, Dr. Hamilton mentions as one of the plans for apprentice training encouraged by his committee:

Schools supported by a group of printers in which the boy puts in the first year in intensive practical work under the direction of a competent teacher and then goes out into the shop to finish his apprenticeship under the teacher's observation.

In brief, then, the unions and to some extent employers approve of initiatory instruction only on condition that it is tied firmly to the apprenticeship system. For example, it is hardly conceivable that a union would object to a school maintained jointly by the union and the employers in which training was given to apprentices already allotted to particular shops, although as yet not at work in the shops.

But let us assume that initiatory training for the trade is offered by a public school to any one who chooses to take up the particular line irrespective of the opportunities for apprenticeship. A union which completely controls the trade will face this problem without much misgiving since it can exclude such persons from the trade or from opportunity to complete their training; it will not concern itself with opposing such forms of vocational training. It may even agree to allow such persons as are taken on as apprentices a certain amount of credit for the vocational training. A weaker union might hesitate through fear that the entire system of entrance of apprenticeship may break down. It is undoubtedly true that there are important advantages in entrance by apprenticeship. In the first place, if there are no restrictions on the number of apprentices the supply of new workers entering the trade is proportioned to the needs of the trade far more exactly than can be accomplished where training for the trade is divorced from industry. Except in those industries where boy labor is profitable an employer takes on a new apprentice only because he needs additional skilled labor. When the industry is expanding, the apprentices increase; when it is stationary, the number of apprentices falls off. Through apprenticeship the trade draws to itself the necessary supply. There are other advantages: The cost of training is less. The poorer boy who cannot afford the time to learn a trade by school instruction, can earn something while learning.

It is conceivable that a union might reject proposals to aid a system of initiatory training because it desired to maintain apprenticeship. But it is probably not the fear that such a system would destroy the apprenticeship system root and branch that bulks largest in the opposition. Connected with the system of

apprenticeship in practically all unions which recognize apprenticeship as the normal method of entrance to the trade is some limitation on the number of apprentices. It is feared by some trade unionists that by the inauguration of a system of initiatory training, the number of apprentices will be increased and the trade will be overcrowded. The limitations on the number of apprentices have other purposes than restriction of the number of journeymen. In some trades, for example, the relative numbers of apprentices allotted respectively to large and small shops are assumed to bear a relation to the facilities for training apprentices. But it is undoubtedly true that the limitations are regarded chiefly as a protection against overcrowding the trade.

Obviously the validity of this objection rests on the assumption that the present rules do restrict the number entering the trade. There are certain trades in which the number of persons entering is limited by apprenticeship regulation, but, the effect of apprenticeship rules on the number entering any one of the important trades must be very small. When one considers, for example, that the carpenters or printers admit constantly any workman who can get the minimum rate and that at least one-half the shops in the country are non-union, it can hardly be contended that the enforcement of the apprenticeship ratio affects materially the total number entering the trade. As a matter of fact, in the greater part of the trades maintaining entrance by apprenticeship, the union shops have less apprentices than the rules allow them, and the number of apprentices is less than sufficient to recruit the workmen needed for the union offices. The reason for this is that the union is especially strong in the larger shops and in the larger cities. Here the trade is more specialized and the advantages at present to the apprentice and to the employer are both less than in the smaller shop. The constant recruiting of the union from the non-union shop means, of course, a constant effort on the part of the union to absorb new material.

It is assumed by those who oppose initiatory training that by its introduction the employer would be more willing to take on apprentices and more boys would be willing to learn the trade. What result might reasonably be expected? Would it not simply be that the men needed for the union offices would be trained there and the men trained in non-union offices would be left there instead of being steadily drawn away, thus making it necessary

for the non-union offices to train up new workmen? The chief change would not be in the total number of apprentices but in the place of their training. In such trades as these a careful canvass of the situation would probably convince the union that it would be advantageous to favor as far as possible any plan which would stimulate apprenticeship in union shops even if the limitations on the number of apprentices were relaxed or abandoned.

THE CO-OPERATIVE SYSTEM OF INDUSTRIAL TRAINING¹

If industrial education means a re-directing and adapting of our education to fit the economic and social needs of our people, then it is a problem which has no single solution. There will be as many school classifications as there are groups of industries, nearly as many solutions as there are types of communities, and there is no single inflexible course of study nor a single line of procedure.

The rapid development of the manufacturing interests of our country during the past decade, particularly in the metal-working lines, has increased the problem of finding an adequate supply of labor and of a proper degree of efficiency. The modern system of production has had much to do with such conditions. The absence of a definite system of factory training has its share of the responsibility.

Meanwhile, the public school desires to hold its pupils, but youth wants to earn money, and parents ask the eternal question, "What shall we do for our boy?" The mother sees that if her boy goes to work in the average factory he is likely to fail in learning a trade, while it is almost positive that he will shut the door against that further liberal education which he might get in the high school.

Now, let us imagine that the boy is able to say, "Father, the problem is solved. The co-operative school is about to be opened. In it I will become a skillful machinist, able to earn more than a living immediately upon graduation, and I will also have all the benefits of a high school education at the same time."

¹ From article by A. D. Dean. National Education Association. Proceedings 1910:612-16.

The fundamental principle of the co-operative system is very simple. In brief, it is this: The technique or the practical side of the work is taught only in a shop or store which is working under actual commercial conditions; the Science underlying the technique is taught by skilled teachers in a public school.

To many it seems feasible so to organize the public school system that it will be capable of dealing with all these children—those in school and those out of school. It would seem that a solution of the problem would be some system of co-operation between the schools and the factories for training those young people in industrial and civic efficiency after they have found their work.

There are well-defined and distinct advantages in both systems of industrial training—co-operative and public trade school. It is hardly necessary for partisans on either side to overreach in their arguments. The real issue at stake is not whether the co-operative system is the only proper system of training, but, rather, to what extent each system can find its proper place in American education. There is room for both, and an analysis of the principles involved is well worth while at this point.

Undoubtedly the co-operative system is economical from the standpoint of school equipment. It places upon the taxpayer almost no burden of taxation, as the existing equipment of commercial shops is used. It is obvious, of course, that trade schools are necessarily somewhat expensive. The same may be said of dental, medical, agricultural, and mechanic-arts colleges. But it is doubtful if the public will be willing to make any unjust discriminations based upon financial considerations against a necessary and proper industrial training of the mass of our people who work in the great constructive industries, in favor of those who are engaged in professional work. We must look beyond such a material argument.

It is claimed that educational waste will be avoided in the co-operative system by using foremen in the shops as teachers of shop-work rather than teachers specially trained. Who can guarantee that they will make good teachers? The practical mechanic without pedagogical training may be able to impart to the student the mechanical manipulations of his trade, but if he cannot make the proper connections with the pedagogic end of his work he will be deficient to that extent.

Another point in favor of the co-operative system—one which

comes under the head of educational waste—refers to the fallacy of attempting to give specific trade education in a public trade school to a boy of sixteen years of age when he does not know what trade he wants to learn, or when he can hardly afford to spend three or four years in a trade school without compensation.

Another weakness of the public trade school is said to be the break in the continuity of systematic mental effort which will exist between the period at which the boy dropped out of school at fourteen and the trade school period when the boy enters it at sixteen; this lack of continuity forcing the trade school to gather up the interrupted, loose, and disorganized threads of mental activity.

If the advocates of the co-operative system feel that they must oppose the public-trade school movement by such arguments, they have at least furnished a valuable contribution toward an argument for vocational training between fourteen and sixteen. Such training is intended to arouse a set of industrial interests which will require specific training for their satisfaction; the latter training to be given in the trade school, open to pupils who are sixteen years of age, or in the shops themselves.

Open to boys who are sixteen years of age, the co-operative system makes one strong appeal. It gives them an opportunity of earning something. They are earning while learning, whereas under the trade school system they do not earn until they have completed their trade education. The co-operative system makes it possible for a child to continue in school, whereas now he is compelled to take a low-grade, poorly paid, unskilled position perhaps without any future prospects either in money or the acquirement of skill.

The co-operative system will naturally serve to keep the business men and employers in constant touch with the public school system if for no other reason than the selfish incentive to get the most out of it for themselves. Given an opportunity to co-operate, it is expected that they will study the schools with their own needs in mind, and as one result they may possibly become interested and aroused enough to better the schools. At least there can be co-ordination between the school instructor and the shop force. So far, in carrying out the co-operative plan in the cities that have tried it, the instructors have been acquainted with the local shop practice. They spend part of the time in the shop

and part of the time in the school. It is their business to observe the students at their work, to study the shop system and any other matter of interest, noticing particularly the everyday shop applications of the various sciences, as mathematics, physics, chemistry and drawing.

It is expected that the co-operative system can be applied not only to the machine trades but also to the tailoring, baking, butchering, building or any other trade where the mechanical equipment or natural conditions are somewhat different from the trades which have already adopted it. Already a department store in New York City has introduced the system. Among other things the salespeople are taught psychology and salesmanship, and are given as much technical knowledge as possible of the things they are selling. In addition they receive a certain amount of general education.

In many instances where the co-operative system is employed there is an apparent one-sidedness in the agreement between the apprentice and the employer which it appears might be avoided. While it may be said that all these employers are men of known integrity, on the other hand the success of the whole scheme depends entirely on their doing what they ought to do. If an agreement is necessary, it seems as if the employer would be likely to stand in much better light with the public if he also was under an equal bond to fulfill some definite agreement. Undoubtedly there is much of value in the co-operative scheme, but before it can have general indorsement, the public must be assured that the plan is so worked out that it results in all-round training and that the half-time idea does not become a half-way scheme.

The pupils that are merely taken into the shops on the half-time or the co-operative plan, may not receive the systematic and progressive advancement in learning the different parts of the industry that is desirable. To a certain extent, the pupils may be exploited for the benefit of the manufacturer, for the money value of the product of the boy's labor often seems to be more determinative to the manufacturer than the pupil's progress in learning the trade. On the other hand, in a public trade school where the work is not carried on under the conditions of a real factory it may be impossible for the pupil to attain a practical skill and efficiency equal to that of a good workman in a factory. Of course much depends on the way the school is conducted. Unless the method of instruction in the school is different from

that at present in vogue in our manual-training schools, the workman's time as a factor in the cost of production never can be sufficiently demonstrated to a pupil where his presence and wages do not depend upon his active productive ability. Neither can the time that may properly be used and the skill required for the different operations be sufficiently understood by the pupil until the product is put to actual commercial use and the pupil rewarded for his work in proportion to his perception and adjustment of these factors of production. Perhaps this is the strongest argument for the co-operative plan.

The co-operative plan has tremendous advantages. In presenting it I have endeavored to be fair to both the public, to the school and the so-called "Cincinnati scheme." Certainly the plan is worth trying. It is very largely based upon a German method. The success of the German system is due not only to the fostering care of a central government but in a large measure to social and economic conditions inherent in the situation. In that country it is taken as a matter of course that employers and schools will work together to promote thoro industrial training. In such an atmosphere the co-operative scheme can achieve its highest development. In America conditions are different. Employers have not taken up to the present time, any great interest in the work of the public schools except to criticise them. Neither have schoolmen taken any interest in the labor conditions in our industries. Evidently the co-operative system offers a means of getting together. But if the school authorities adopt this plan simply to avoid spending public money, and employers take up the scheme simply to throw off the burden of responsibility of obtaining skilled labor upon the public schools, simply because they have been negligent in the past in doing what may have been their duty, then the scheme is doomed to failure. The co-operative plan must get beyond selfish, personal motives if it is to be a part of an American system of education. Primarily the schools are managed in the interests of their boys and girls. I would not dampen the ardor of those that favor the co-operative system, but no association of employers can be allowed to dictate a system of public education unless it be along lines which are of direct personal advantage to the boys and girls. Then it will not be dictation, but co-operation, and that we all welcome.

CONTINUATION SCHOOLS¹

There are two propositions upon which my whole argument depends. These are as follows:

1. The state possesses no higher treasures than the moral and intellectual powers of its youth. This applies to all classes of youth whether destined for the trades or the professions. As the Germans say: "No nation can take and sustain a prominent place in the modern world that fails to develop and utilize the powers and ability latent in all classes of its people."

2. "No boy or girl ought to be treated," as Winston Churchill says, "merely as cheap labor. Up to eighteen years of age every boy and girl in the country school, as in the old days of apprenticeship, should be learning a trade (or vocation), as well as earning a living." No person should be permitted to employ the boys or girls during these formative years without assuming some responsibility for their learning a vocation.

I expect to show that these propositions require the addition of a new type of school to our system.

A fundamental defect in our present school system results from our custom of terminating compulsory school education at fourteen years of age. Everyone will admit that this is too early. We contribute to the support of the public schools on the ground that they are necessary to the perpetuation of our free institutions. We urge that a certain minimum of instruction and training is indispensable as a preparation for citizenship, and that the training of character connected with the minimum is of great importance for this preparation. We are permitting our boys and girls to leave our public schools at fourteen, just at the time when they most need guidance and instruction, just at the time when character-building really begins, and just when they should be objects of special attention in our educational plans. Before the age of fourteen the youth is too immature to comprehend the training required by a citizen in a modern state. He has not the judgment and power of resistance to temptations necessary for an independent life in modern society. Our school training, therefore, is not carried far enough at the present time to reach its real aim, to provide instruction and training necessary for the solution of the problems of everyday life. Further, the youth who leaves school at fourteen loses and wastes almost the

¹ From article by Edwin G. Cooley. National Education Association. Proceedings, 1912:1203-7.

entire results of his eight years in the elementary school before he is of age.

The necessity for carrying forward the school instruction beyond the years of compulsory attendance is becoming more and more urgent. The transformation of the social body, the rapid transition of our people from country life to city life, the development of the industries and commercial activities demand more from the school than they did in the past.

The nineteenth century has made the elementary school, which was often nothing but a reading-school or a school for three R's, a real educational institution for the people. As Friedrich Paulsen says :

It will be the mightiest problem of the twentieth century to build the elementary school as a general and fundamental form of school a new finishing educational institution, or to give to the elementary-school instruction its necessary conclusion in a kind of vocational high school, a school whose problem will be the carrying forward and making fruitful of the general education for vocational activity.

The course of education for every position in life should include two grades. The first is the elementary school, whose problem is—apart from the development of the intellectual powers—to provide exercises in the school arts which every successive instruction presupposes and makes use of. In a democracy this elementary course should be the same for all, and can be communicated to all divisions of the people in one common institution—the elementary school. The second grade has as its problem to advance financial means of the pupils in accordance with the degree of existing financial means and mental powers, and to give real vocational education. This is true of the so-called learned occupations which demand a real scientific training as a preparation for a profession. This is provided by the universities, and the various sorts of technical and commercial colleges, and by our secondary schools. To be fair to all, modern conditions require another type of school which, like other schools, presupposes the general training given in the elementary school, but which has as its problem the training for the vocational life of the youth who must leave the ordinary school at fourteen years. This training on the immediately practical, technical side may fall to the vocations themselves, but a school must be provided to supplement this shop training by supplying the knowledge and skill demanded by modern business or industrial

the school now known as the continuation or part-time school.

Care must be taken, however, that this new independent type of vocational school which takes the youth on leaving the elementary school not only provides a practical vocational education, but also considers the needs of the man and the citizen. The vocations, however, will stand as the central point of every well-regulated life and exercise a reaction upon all the remaining human activities.

Nevertheless it should be emphasized that the problem of this new school is providing an education for citizenship, remembering that a good citizen must necessarily be able and willing to earn a decent living. We cannot leave the instruction concerning the public duties of man exclusively to party eloquence or to the daily press. This work cannot be done in the elementary school on account of the lack of maturity, experience, and power of comprehension of young children before the age of adolescence. The boy, however, who enters into practical life is immediately attracted by questions of citizenship, and comes to such instruction with all sorts of practical questions. He now has an interest in these questions, and an understanding of their significance which was impossible during the elementary-school period. If this instruction can grow out of concrete facts, and experience can be related to the rights and duties of the pupil himself, we shall succeed in utilizing this interest. In this course we should include some study of politics, of the position of our country among the nations of the earth, of our possessions, our power, our productions, and our commerce.

We must not forget that such youth are still boys and girls with an interest in amusements and activity of various kinds. Play and excursions, evening entertainments, and festivals should be carried on in connection with their school work, as they are now carried on in connection with our secondary and elementary schools. Libraries and reading-halls should be provided for such continuation schools, and the wise use of books will be a most important function of the teacher in such institutions. Such schools should be supplied with playgrounds, library halls, collections of tools, books, and apparatus, and we should encourage the union of former pupils with the students in the continuation schools. Our problem is with the whole boy, and we must not neglect his recreation. These continuation schools must be complete schools undertaking so far as possible the training of the

whole boy, and not the producing of cheap skilled labor for the employer.

These schools are not continuation schools in the sense of being places where the instruction of the elementary school is continued and reviewed, but a continuance of the boy's education under new conditions and with a new point of view. We have up to the time of entering these schools taught subjects, have provided general training, which it was hoped would be later applied to special cases. The continuation school reverses the process and follows the maxims, "Try to expand from your own center," "Proceed slowly step by step in your own way, from the individual to the universal." This means a change of attitude that will profoundly modify instruction in other schools.

These schools must not be confused with evening schools which have continued and supplemented our former education. These new schools must have their own organization, their own corps of teachers, and day instruction in suitably equipped school buildings. In the most progressive German cities they have their own buildings, corps of teachers, branches of education, and all that goes with an independent school.

There is no lack of interest and power for the carry-out of this ideal among our people. There never was a time when the interest in education agitated the people more powerfully than today. There never was a time when the so-called upper classes felt more fully their obligation to extend the hand to their brothers below to bring them up to a higher and richer life.

The supplement to our educational system is necessary. As Friedrich Paulsen says:

The education provided for our youth may be compared to an abandoned ruin: the foundation is laid, a few walls are constructed, then the work is left to the destruction of wind and water.

Our school system can be regarded as finished only when we provide an instruction for all that will fit them for the activities of real vocational life.

CONTINUATION SCHOOLS FOR CHILDREN OF SCHOOL AGE¹

When we speak of continuation schooling we mean any kind of training adapted to people who are already at work. People with the right outlook on life feel that when they stop growing mentally they decay. When they cease to look forward it is a sign of aging. With this in mind those who have a foundation never stop reading and studying, but how is the great mass of our population to enjoy such happy old age when they have never obtained the fundamentals necessary for self development—this is a problem worthy of most serious study.

The mortality in school attendance, as shown here for the different grades, calls our attention to the need of supplementary work adapted to the needs of those who have quit. According to the 1912 report of the U. S. Commissioner of Education, pages xiv-xv, in 1911 of children 10 to 14 years old, 8,940,000 or 96.15 per cent, were in school; 15 to 17, 3,060,000, or 55.81 per cent, a drop of 4 per cent, were in school; 18 to 20, 940,000, or 16.59 per cent; 21 to 24, 4.75 per cent. There were only 20 per cent as many in the eighth grades as in the first, and only 3.4 per cent as many in the last year of high school.

There are two million children between the ages of fourteen and sixteen out of school in this country. Not more than half of these are at work at any one time, or were forced to leave school through economic pressure. The school did not hold their interest and parents tired of insisting on their attendance. Most of these left before the seventh grade, had no knowledge of real value to themselves, never attended school thereafter, and were thrown upon the world at the critical period of adolescence. Citizenship has not been taught before the seventh grade and these young children need instruction in it as well as in trades.

"If we need proof that our headless and aimless administration of over \$500,000,000 (five hundred million) annual investment in public education is a failure consider the fact that half of all who enter it leave as failures or disinterested by the end of the sixth grade," said H. E. Miles, of Wisconsin. Fifty per cent efficiency is too low for any machine; why is it accepted for

¹ By Frank Harrison. *School and Society*. 4:617-24. October 21, 1916.

schools? We have provided long enough for the abstract-minded child who has been surrounded by books from infancy, to the exclusion of the "hand-minded" child.

In 1910, twenty thousand pupils were in continuation schools at Munich. Ninety-three per cent of the boys and girls under eighteen were at some kind of public school. How much different such a condition is from that in the United States. Certainly our need of such a system is imperative and immediate.

As long as our regular high schools are organized to get ten boys out of five hundred to college we must have continuation opportunities. It seems a sad commentary on the citizens of a country where majority is supposed to rule, that an injustice is done four hundred and ninety boys to help only ten.

What more startling statement do we need to show the failure of our elementary school and the importance of further education for those who leave early, than that "handsome, intelligent, supposedly well-educated mechanics of nineteen to twenty-five, had to begin reading in the Wisconsin continuation schools with the primer," a true statement according to the president of the Board of Industrial Education of Wisconsin.

Continuation courses should be arranged at public expense to fill the need of short courses without substantial requirements. This is a field in which the Y. M. C. A., Y. W. C. A., business schools and correspondence schools are attempting to operate now.

The United States Bureau of Education Bulletin Twenty, page 29, for 1913, shows that

Of thirteen million young men in the United States between 21 and 35, only 5 per cent have received in the schools direct preparation for their vocations; of every one hundred graduates of our elementary schools only eight obtain their livelihood by means of professional and commercial pursuits, while ninety-two support themselves by manual labor.

And yet we hesitate to help such a majority which must be as far below what is possible as the illiterate is below them now.

To-day instead of providing the guidance of continuation schools we use up our youth in parasitic industry, requiring for cheapness' sake unskilled juvenile labor that leaves the child when he has gone through adolescence, without a trade, without ambition, without, in fact, a social life at all.

The private trade school, even if well organized, does not fill the purpose of continuation schools. They train men for bosses,

not workmen. In practically every instance employers have found they are unable to cope successfully with providing education for young employees single-handed. Factory schools are unsatisfactory in that it can not be to the interest of the manufacturer to give every apprentice an equally good special and general training. He only concerns himself with the best among them, and not with those of the best character, but with those of the best intelligence and manual skill.

Since the state is not willing to pay the living expense of children, it seems inconsistent to insist upon compulsory full-time attendance at school. The practical way of meeting the situation is to establish continuation schools or part-time classes and make them compulsory.

The bringing of children to a public officer, the teacher, gives an opportunity for study as to health conditions that the selfish employer never takes time to consider. It lessens the necessity of entering "blind alley" occupations. About 85 per cent of children, if unguided, go into jobs that lead nowhere.

One object of the continuation school is to give information on each of the processes related to the individual's occupation so that the apprentice does not succumb to continuous work at a minute operation. Principles are taught, and the use of material, tools and machines, in general.

Among the many recommendations of a Dominion of Canada Royal Commission in Industrial Training and Technical Education we find in the 1913 report, (1) Subject-matter should be with real problems of daily life of the students; (2) that teachers shall have had practical experience in the occupations dealt with and be skilful in teaching, enthusiastic and sympathetic; (3) that attractive, comfortable and convenient rooms be provided and plenty of equipment; (4) social intercourse is to be stimulated.

The continuation school is necessary for those entering industry early to supplement poor home training in morals, civic duty and political rights. With husband and wife both in industry, little encouragement is given at home. Especially in overpopulated states and cities public help is even more important for girls than boys. Girls must be trained to be mothers and household managers, on the side, while they work for part of the family living.

So much has been said about the need of lengthening the age

of compulsory school attendance that I must defend further my statement that provision should be made for allowing the child to enter industry early. The teacher and educational theorist have become too conceited. They seem to think the only way to become educated is to attend school. The best plan is between the extremes of the school teacher's ideas and of the ideas of R. T. Crane. There is value in general education, but it is a stimulus to laziness. The boy really feels better if he is working, he feels more independent and ambitious, providing he is working under good conditions. He is strengthened physically and learns a trade from a practical standpoint which the school can not present alone. Thus the combination of the advantages of this with a continuation education would seem a step in advance.

Boys who are not inclined to study books find school a drudge and certainly they are not a pleasure and joy forever to the teacher. Let me give one instance which is typical of many I have observed. A lad had been truant and delinquent until the court decided something final should be done as a last attempt at reform. Work was found for him with a reclamation surveying crew. He was to obey orders of the chief of the crew as though they came from the court. To-day, less than five years since, he is foreman of the crew and drawing a salary of \$3,000 a year. He is happy and the state should be. Why do we wait until boys are steeped in truancy and possibly crime before we respond to their nature and let them work?

Dr. J. P. Monroe shows the psychology of this and the loss by not responding to it with part-time schools. He says:

The boy wants to make something, to see some tangible result from all these weary hours in school; but the teacher has no idea how to make things, the text-books say nothing about it, and young people who make things are apt to be exuberant, eager, full of questioning. The child's desire to invent is stifled, but he is told he will see the use of the things he is asked to learn by and by. We destroy his individuality with predigested—though nevertheless still indigestible—facts, yet we censure him for exploding, out of school, into mischief, petty crime and worse.

The average pupil does not want to go to college, and in nine cases out of ten he ought not to go. From the moment he enters the primary school the boy should be studied to find out if he is really fitted to go to college. He should have the freedom that would enable him to demonstrate what he is fitted for. Then if he is not adapted to college he should be directed into some trade and into part-time schools.

The National Association of Manufacturers reported in 1910 on ten points of industrial training, among which are these:

Industrial education must consist of skill and schooling and these two parts are of equal importance. They must be organically combined and each will coordinate and supplement the other. The average schoolmaster is incapable of the task, so that half-time schools are feasible and practical.

Professor John Dewey, in his "Moral Principles of Education," relates a true story illustrating what employers think is the matter with school technical training, and which continuation school would remedy.

There is a swimming school in a certain city where youth are taught to swim without going into the water, being repeatedly drilled in the various movements which are necessary for swimming. When one of the young men so trained was asked what he did when he got into water, he laconically replied: "Sunk."

So many of the boys trained in schools to be bookkeepers, merchants, engineers, etc., sink when they get in the water of real business and industry.

Frank M. Leavitt, of the University of Chicago, uses the following statement, which summarizes what I have to say on this point.

The continuation course takes a boy at this critical period and shows him how work and education are correlated rather than things apart.

Since there are so many advantages in part-time work, and such a need of school opportunities for children in industry, why is it that we do not provide for it in the United States? Is it because it is new and untried? No. They are of wide use, especially in Germany and England.

In England they are mainly evening schools, assisted by national grants, but nowhere compulsory. They are unsatisfactory because (1) youths are tired, (2) teachers are untrained for this kind of work, (3) supervision is difficult.

In America, also, they are mainly evening schools. Not all regular high school courses are covered, but some general and much technical work is taught. Large numbers of foreigners go to learn English. The present trend is toward part-time day schools. Lecturing, music and drama are better fitted for evening. Day work makes it possible to develop a special teaching force for it, inasmuch as it would be arranged that the pupils would appear in relays, the same teacher dealing with successive groups, so it would be financially practical to employ specialist

teachers. But since this takes time away from the employer it will probably require compulsory legislation here as it has elsewhere.

At Fitchburg, Mass., the boy agrees to stay by the employer three years, and the employer agrees to teach him the various branches of the trade. Cleveland provides twelve schools which those going to work before completing the elementary schools must attend six hours a week in the daytime unless over sixteen years of age.

Many Swiss cantons, especially Zurich, Lower Austria, and Scotland, have day continuation schools. In Bavaria there were, in 1913, sixteen day continuation schools with five hundred enrolled. Daytime attendance is compulsory for six to twelve hours a week for all under eighteen in Bavaria, Wurtemberg, Saxony, Baden and Hessen, for both town and country population.

In Germany there are two types, (1) General, (2) Industrial. The idea originated in instruction in Christianity in 1870. In 1891 by imperial decree it was made compulsory for employers and parents to send children to continuation schools where established. For a time the work was done Sundays and evenings, but the tendency now, as in America, is to take six or eight hours a week from work time. Industrial and technical instruction is along the line of work during employment. In Germany the continuation school is not responsible to the ministry of "Public Worship, Instruction and Public Health," but to the departments of trade and commerce and agriculture.

Let us now consider some of the points involved in the different types of continuation schools. As I have already brought out, there are schools taking but a few hours a week for those with regular jobs, schools taking half a day—so that two young people fill the same desk and the same job each day—and evening schools.

The evening school does not warrant attention for people under eighteen. As I have already said, evening schools should be voluntary, but day school compulsory, otherwise employers will prevent their youthful workmen from making use of the opportunity except at night when mind and body are fatigued. The number of public-spirited employers is too small to make voluntary day schools a success. In Cincinnati it was found night work did not attract the apprentice. Ten hours concen-

trated attention to a machine leaves little energy for study, and the city has many more alluring ways of passing an evening.

The first use of the part-time plan in the United States was by the University of Cincinnati Engineering Department in 1906.

It has since been started in Fitchburg, Beverly and Quincy, Mass. Conditions in these cities are typical enough to show that some type is adaptable to any community's need. At Fitchburg the course is of four year's duration. The first year is in high school, and the next three years alternate weekly between shop and school. The boys are paid 10 cents an hour the first year at work, 11 cents an hour in the second year, and 12½ cents an hour in the third year. Because of increased interest, ambition and efficiency, employers find they do not lose by allowing two boys to take turns at a job.

Since under the half-time plan only twenty weeks a year are spent in school the time should be spent on subjects of practical value, as English, current events, arithmetic, drawing, civics and sociology, chemistry, physics, electricity and mechanics.

Frank M. Leavitt reports that at Fitchburg boys on part time have "no difficulty in keeping up their social standing. They constitute the major portion of football, basketball and baseball teams, and hold class offices."

It is a significant fact that the Quincy continuation school has not lost a boy until the course was completed, when we remember the per cent that drop out of our elementary and secondary schools. Promotion at Quincy is irregular, the bright go fast, and the average take three years. The school has absolute control of the boys and assumes full responsibility.

However, the half-time plan is adapted only to those who are fairly well-to-do, to those whose only trouble is that they are uninterested in regular academic work. For those who can afford to spend but a few hours a week away from work, and who leave school before finishing the eighth grade the tendency is toward the six- to twelve-hour-a-week plan.

Here again Cincinnati is one of the best examples, since it has schools for boys who work most of the week but attend school four hours. These boys receive pay for attendance and are docked for absence by employers. The school handles them in groups divided according to proficiency. The cost per pupil, according, to F. B. Dyer, superintendent of schools, is \$15 a year.

H. E. Miles is accomplishing wonderful things in Wisconsin.

Forty thousand pupils were given vocational education five hours a week in 1913. These children are also paid the same wage as when they worked full time. The Wisconsin law is compulsory for those who are 14 to 16, unless the child has finished the eighth grade. The annual cost per child was \$10, or less than half that of the common school, while the cost for similar training before the state took hold had been \$300 in private schools.

Many problems have remained unsolved, and some new ones have developed for those who are pioneering in this field.

It is difficult to make continuation technical schools practical unless industries of a community are homogeneous, and the community can agree that it would be advantageous to supply more and better men for such industry. There is danger of creating more printers, mechanics, etc., than the trade will bear, and it is an expensive proposition to educate a man to a skilled position only to find the labor market in that trade is overcrowded. Many think such is the condition of our stenography and bookkeeping departments to-day. We are making bookkeepers only for them to find that they must learn something else in order to get work.

Then there is the industrial problem of a disastrous competition with adult labor. There is no adequate solution of the difficulty, although a limitation of the proportion of apprentices to journeymen goes part way. Possibly a minimum wage for men would be sufficient.

The editor of the *Contemporary Review* says:

At all cost we must avoid the German danger of "over-emphasis of technical training." The object of the continuation school is to develop the whole man.

However, "technical and trade training in the German system is only the starting point for the wider general training, for the education in practical and theoretical thinking, in consideration for others, in devotion to common interests, in social service for the state community," on the authority of Dr. George Kerschensteiner, of Munich. Around this they weave religion, civics, hygiene, physical development, penmanship, spelling, reading, physics, chemistry, etc. Even the "American Federation of Labor Magazine" warns us that there is a growing feeling that in industrial education the human elements must be recognized and can not be so disregarded as to make the future workers

mere automatic machines. Dexterity must be based on insight.

At first thought it might seem necessary to have such an expensive duplication of machinery and tools that the plan is impractical. But such is not the case. The school could be in constant use. It should be located in the center of the industrial district and the pupils so organized that some would come in the morning and some in the afternoon, some Monday, some Tuesday, and so on for six days of the week. It should be in the industrial district so it would not be far to or from work, and easily accessible from homes in every part of the city.

Germany has found that employers have a more direct interest if they bear some share of the cost of the attendance of their apprentices. So they must provide material and cooperate in the selection of teachers and the conduct of examinations. Many employers in England have agreed to pick their apprentices from those who will go to continuation schools. Since the plan is voluntary in England it has been necessary for the Industrial Education Board to take steps along this line to stimulate the interest of the boys in the value of attending.

For those who are opposed to child labor it is encouraging to note a tendency to discourage exploitation of children when the employer has to bother with compulsory continuation schooling.

Dr. Kerschensteiner compliments the American regular schools on the opportunity given for student activity, and says that it is especially adapted to continuation schools, though in Germany it is lacking everywhere. Leagues, societies, fraternities, associations, debating clubs, music clubs, self-government should be introduced in the system, providing the teachers can enlist them in the service of school interests.

Carroll G. Pearse, formerly superintendent of schools, Milwaukee, Wisconsin, page 571 of the report of the National Education Association Meeting of 1912 in Salt Lake City, says: ,

The selection of teachers for continuation schools is of first importance; only the best teachers can be used. People who are in school only a few hours each week must have the best equipment and instruction; their time is precious.

At Cincinnati the chief difficulty has not been to secure the interest of the community, employers or boys, but to get prac-

tical and inspiring teachers. They have come to the plan of taking a man from a shop to handle the school. They try to get one with a liberal as well as practical education. Unless employers have confidence in the teacher they do not like to co-operate. The lack of confidence in the teachers is what makes employers so opposed to technical training in schools of to-day, when there is any opposition at all. Part time in practise would largely meet this. The instructor problem must be the hardest in Germany also, for there is a German saying, "God knows everything, and the German professor knows everything better."

One of the main reasons continuation schools have advanced faster in Germany than here is the difference in the character of the industries and school division points. Few American boys become apprenticed. The law says they shall not leave school until fifteen, but at that age they have finished the grade school and should be in the high school. In Germany boys and girls begin apprenticeship at 14, and they are not dissatisfied with using children of this age. Dr. Kerschensteiner says:

From an educational point of view it is desirable to make fourteen the age for commencing, for there can be no doubt that working at a trade is or might be an essential factor in the formation of character. Nothing strengthens character more than honest trade work. Nothing so crystallizes the crude charcoal of childhood into diamonds of humanity as systematic self-directed effort during adolescence.

However it must not be allowed to become drudgery. This is where part time or continuation schools step in and expand the blind alley and make possible a future. To this end our grammar school should be lengthened two years, which would make the finishing age about sixteen, some would then enter industry and continuation schools, others would go on to high school, which should be extended two years to take what are now college subjects. Then a chosen few would go to a real university of three years leading to an M.A. degree.

If the United States is to maintain a place among countries of the best educational advantages it must face this need. There is need of a strong personality to keep a keen civic consciousness on the duty of the state to educate those who must be self-supporting. Professor Leavitt says the interest and optimistic personality of Dr. Kerschensteiner had much to do with making Munich the best example of this type of school.

Political, social and economic conditions are so interwoven with the educational system that any progress or enlargement of the scope of the school will produce vital improvements in American citizenship. Let each state do its share to help those millions who enter industry without adequate general and technical training.

COMMERCIAL EDUCATION

SECONDARY COMMERCIAL SCHOOLS IN GERMANY¹

From one point of view the middle or secondary commercial schools are the oldest of all types of German commercial schools, for they belong to the general *Real*-school group. Francke is commonly reputed to have laid the foundation of this modern movement in his organization at Halle (1698), when he set apart a separate secondary school (*Pädagogium*) for those children who were not going further in their studies, but were looking forward to commercial work, administration of estates, and allied undertakings. In 1747² Hecker founded his first *Real*-school (an institution that still exists in Berlin as the *Königliches Kaiser Wilhelms-Realgymnasium*), wherein was found a special "manufacturers', commercial and business" class, with commercial correspondence and bookkeeping as important subjects of instruction. Had the ill starred Philanthropist movement under Basedow and his followers been more sanely and skillfully directed, it might have played a more significant rôle in the development of the commercial movement, for each of these schools under this aegis had its commercial classes or sections. "Commercial science," whatever may have been the connotation of that term then, and bookkeeping, appear to have been the chief representatives of business interests in the program of studies. In Hamburg, in 1803, even the classical *Gymnasium* had its so-called *classes civicae*, which later developed into *Realgymnasium*.

¹ From "Commercial Education in Germany," p. 139-42. By F. E. Farrington, Associate Professor of Education Administration, Teachers College, Columbia University.

² It is interesting for students of educational history to note how nearly this accords with the date of Franklin's plan for an American academy, and the opening of the school in Philadelphia (1743-1749). Each of these movements was the beginning of a protest against the traditional educational order in their respective countries, a protest that has only become effective during the present generation.

The officially recognized differentiation of *Gymnasium*, *Ober-real schule*, and *Realschule*, in 1882, and the equalization of privilege for graduates of the three first named types of institutions in 1900 went far toward raising the repute of the modern as opposed to the classical school, and therefore put these secondary schools with commercial courses in a much more honorable position. In the new program of 1901 the *Realschulen* were officially recognized as forming the lowest and middle grades of the *Oberrealschulen*, a state of affairs that is not altogether to the liking of the German Union for Commercial Instruction. This dissatisfaction became more pronounced since the *Realschule* began to serve as a middle technical and trade school, rather than as a commercial school.

Despite the general commercial activity throughout the land the middle or secondary commercial schools have not developed so rapidly as the elementary and university grades.

THE PLACE OF THE HIGH SCHOOL IN COMMERCIAL EDUCATION¹

It is a commonplace that European countries, and especially Germany, have in the last decade been striving with particular earnestness to make their schools perform a function in the training of business men. England, France, and Belgium have perhaps not been overenthusiastic in the attempt, but they have been by no means inactive; and while they have not kept pace with the strides of Germany, it is yet true that each country has made distinct progress. In England, owing to the comparatively backward state of the whole educational system, the problem is particularly difficult. And consequently, so far as day instruction is concerned, only the merest beginnings of an adequate system can at present be discerned. In all of the Continental countries of importance, however, commercial education, both in quality and in quantity, has gone far beyond the elementary stages. Very naturally we look to Germany for the most significant ventures in this new field to educational endeavor, for enterprise in this direction is merely in harmony with the theory of Ger-

¹ By James J. Sheppard, New York High School of Commerce. *Journal of Political Economy*. 21:209-20. March, 1913.

man education. Those who have read Dr. Cooley's highly instructive report on foreign schools are familiar with the general plan and scope of commercial education in Germany. For my present purpose it is sufficient to emphasize one striking difference between the German system and our own. Relatively speaking, no great progress in commercial instruction has been made in the German secondary schools. Training of this kind is provided chiefly in the schools of continuation and of college grade. Of the former there are hundreds.

While adequate provision is thus made in Germany for commercial instruction at the bottom and at the top, it is a striking fact that not much progress has as yet been made in the middle or secondary field of study. There are, of course, some *höhere Handelsschulen* and occasional commercial classes, but in general secondary instruction follows the traditional course. Where it is modernized the modification has been scientific rather than vocational in character. In this country, on the other hand, it is precisely in the secondary field that commercial education has won its greatest success, and where, it seems to me at least, it is to reach its greatest efficiency. Year by year the annual report of the commissioner of education shows striking gains in the number of students of high school grade pursuing commercial subjects. Even more significant, perhaps, is the establishment in the last few years of special commercial high schools in a number of important cities. New York City has two such schools. Others are to be found in Boston, Philadelphia, Washington, Springfield, Mass., Detroit, Cleveland, and Columbus.

The American high school, with its absolutely free instruction, often with free supplies as well, and with its doors swinging wide to admit all who have completed the elementary school, has no exact counterpart in Europe. It is a thoroughly democratic institution, whereas schools of similar grade abroad work under limitations which seriously interfere with the democratic ideal. Secondary instruction in this country has made enormous strides in the past decade, and perhaps as never before we are now face to face with the problem of deciding the dominating aims of our middle school. In theory at least it has been determined that the college-preparatory idea shall be cast aside as hopelessly out of date; in practice, however, that idea still has a remarkable hold upon the secondary school. I intend to discuss only the commercial aspect of vocational training in the

high schools, and to point out ways and means for realizing proper ideals in secondary commercial instruction.

What are the proper ideals? To begin with, it should be clearly understood that commercial education involves vastly more than familiarity with a few such subjects as arithmetic, bookkeeping, stenography, and typewriting. These are of course fundamental and important, but it is a tremendous mistake to ignore the fact that the business world of today demands a much wider range of training than is provided in the old-fashioned business-school curriculum. In other words, the business man of today requires an equipment which goes far beyond the ability to record business transactions. Recorders have their place, of course, but doers have the far more important function. Germany's extraordinary success in building up its foreign trade is due in very large part to the commercial agents who have gone out from the fatherland equipped with a knowledge of a foreign language, conversant with the laws and customs of the foreign country to which they go, with its economic possibilities, and with its particular commercial needs. It is highly desirable that we, too, should be able to have adequate representation of our commercial interests abroad, but even at home there is a big field for young men whose knowledge of business is broad and comprehensive. I am not claiming that the school alone can give such knowledge, but I do contend that an adequate course of study will put the prospective business man on the right track. I am not arguing for a course of study designed only for those who are likely to be business leaders; there are a vast number of minor positions and a vast number of youths whose capabilities limit them to such positions. What is required is a course of study wisely arranged to meet the needs of the several types of students. Such a course would make ample provision in the first year or two for the sort of training requisite to employment in minor commercial positions. This can be done without sacrificing the necessary continuity in the course for those who carry it to completion.

This brings me to a consideration of what may be properly included in an adequate commercial course for secondary schools. My experience leads me to believe that practically all of the standard secondary subjects, with the exception of ancient languages and, possibly, mathematics, may well be utilized for commercial instruction. But I hasten to say that this is true only

if the selection of topics and the method of attack be governed by the dominant aim of the school. In other words, the outlines of courses in the same subject should differ very widely as between the college-preparatory and the commercial divisions. Largely for this reason I would argue for separate commercial secondary schools wherever community conditions are favorable. The day may come when it will be realized that there is a distinct gain for all classes of pupils in following a method of study dominated by practical rather than college-preparatory aims. In my own city there is a decided tendency to reshape the outlines of study for the several subjects with a view to making them more practical. We of the High School of Commerce have naturally been gratified to note a gradual approximation to our own scheme of studies in a number of the items of the curriculum on the part of our sister schools of the metropolis. If this were generally and adequately done there would of course be less need for the separate special school.

An adequate secondary commercial course, as has already been implied, will embrace such subjects as English, modern languages, history, science, and art as well as the more technical subjects of bookkeeping, stenography, typewriting, and commercial law. It will also give an important place to the study of economics, a subject comparatively new in the secondary curriculum but destined to prove, I feel confident, an exceedingly valuable instrument of secondary training and indispensable in a satisfactory commercial course. It is, however, in the special treatment of these subjects that their commercial value is to be realized. The English instruction of the commercial course will not be hampered by college-entrance requirements, but will follow a simple, rational plan with due regard to the interest of the student. It will include such matters as letter-writing with drill on ordinary business idioms; the composition of telegrams; the writing and answering of advertisements; oral and written reports on commercial topics; the preparation of a comprehensive and careful discussion of some particular line of business. Nor will training in effective oral expression be neglected. The power of concise and persuasive speech is of much moment to the business man.

In history the emphasis will be shifted from political and military matters to economic and commercial phases. Fortunately the new school of textbook writers are giving us suitable mate-

rial to work with. In addition excellent special books are now available. Civics in the commercial school will be a first-hand study of the government as it actually affects the student and will not overmuch concern itself with governmental forms and constitutions. It will emphasize the study of municipal activities and acquaint the student with the business aspects of his own local government. For the last half-decade we have been giving to first-year students in the New York High School of Commerce a course in the government of the city which to my mind far outweighs in value the usual course in civics which concerns itself with a broad outline of government, federal and state. The latter we do not neglect, but we associate it with the study of American history and reserve it for the mature students. The National Municipal League has been carrying on a campaign for a number of years to secure a place in the high-school curriculum for a course in municipal activities and its work is beginning to bear fruit.

In European commercial schools the study of foreign languages is a conspicuous feature of the program, two and often three such languages being included. There is special need for such instruction abroad where different nationalities crowd close upon one another—international commerce being to them very much what interstate commerce is to us. Obviously no such urgent reasons for emphasizing modern languages exist on this side. Nevertheless a well-rounded commercial course will not neglect language instruction. Apart from their disciplinary and cultural values, the modern languages have a distinctly practical bearing on business life through the opportunities they afford the student of securing an intimate acquaintance with the commercial activities of foreign countries. The social and business customs of the several countries, their imports and exports, their commercial relations with us and with one another, may all be studied now in books well adapted to secondary instruction. Experience shows that four years of the study of one foreign language, with a view to securing facility in its conversational use, can be relied upon to insure a fair degree of fluency in speech. A mere reading knowledge is not sufficient for the commercial graduate who can well dispense with some of the niceties of modern-language study for an equipment of immediate importance to him. Naturally Spanish should be one of the modern languages taught, though I must confess that the opportunities

for young men well trained in Spanish have seemingly been overestimated. A goodly number of our young men have secured places through their knowledge of Spanish but relatively satisfactory openings in Spanish-American trade have not been what might reasonably have been expected.

Science has been rather generally disregarded in the typical commercial course and yet the modern industrial world touches science at every turn. One great difficulty with science teaching in the secondary school has been that it has been too scientific. We have really had carefully developed logical courses of the college trimmed down to the secondary requirements. The secondary school and particularly the commercial secondary school should work out its own problem in its own way. Its aim clearly should not be to turn out scientists. That is impossible. It should introduce the student to an interesting field of work where he will acquire a distinct method of study involving doing and seeing things for himself and drawing conclusions at first hand. The peculiar commercial value of such studies as biology and chemistry hardly require statement. Biology, for instance, may be utilized to introduce the student to the raw materials of commerce, their production, growth, and relative values. Topics such as sanitation, prevention of disease, conservation of natural resources, sources of raw materials, plants and animal breeding, development of natural products will form the staple of instruction. In the study of seeds, for instance, the pupil is led to make a classification of all seeds that are of commercial importance. He investigates the method of seed selection for planting, and the relation structure, germination, and efficiency have to the production of good crops and large yields. Then will follow the study of ploughs, harrows, cultivators, as instruments for preparing the soil, and of machines and methods employed in the harvesting of crops. This gives the pupil a meaningful glimpse into the great field of agriculture. Finally comes the study of the milling of the grain and the distribution of the product as a food supply. The student will learn that the findings of biology have a distinct bearing upon commercial processes, that all industries which concern plant or animal production are developed only as progress is made in biological research, and that the method of experiment is the only way in which real progress can be secured.

Chemistry offers interesting possibilities for commercial and

industrial application in the study of processes and materials. Obviously the outline of study in biology and chemistry in the commercial course will show wide divergences from the outline usually followed in the general high school. Commercial knowledge will be the primary aim and the purely scientific will be the by-product. In New York City and other centers there is a decided tendency to modify the teaching of science in the direction I have indicated.

Today one of the chief items in the cost of producing a staple article is the expense of advertising it. The business world spends enormous sums to attract and secure customers, and, in doing so, makes use of many avenues of publicity. Note the numerous advertisements appearing in magazines and other publications, and observe the artistic care evidenced in their presentation. Not only are the illustrations well drawn and attractive, but the lettering and arrangement of descriptive matter are also in the best of taste. Clearly here is a hint for the drawing department of a commercial school, whose business it should be to develop a course of study centering about artistic lettering and advertising design. Hundreds of articles of commerce today owe a great part of their value to their artistic advertisement, and if only for the refinement of taste which it cultivates, the study of drawing in the business school would have a distinct commercial value.

It is hardly necessary for me to dwell upon such subjects as may be classed under the head of business technique—arithmetic, penmanship, accounts, stenography, typewriting, and business law—for clearly their place in the commercial curriculum is obvious and well assured. Because of their immediate practical importance they must receive adequate time and attention throughout the course. The commercial graduate properly trained in stenography and typewriting has a distinct advantage. While it is not desirable for a capable young man to settle down to stenography and typewriting as a permanent occupation, our experience has shown that training in stenography furnishes a stepping-stone to more important business positions. One of our graduates recently wrote me on the point. He says: "Starting out, the graduate should get his first years of training in a stenographic position. This gives him an insight into the work of the inner office, and I have found from present experience and from conversations with other commerce boys that the average employer is only too glad to advance to higher positions the stenographer

who shows that he is above the job." I have in mind now a large number of instances which support this statement, though of course it should be remembered that a well-equipped commercial graduate has abundant opportunity in other directions.

There remains for consideration the subject whose rare value for commercial training has been tardily realized—economics. Even our best secondary commercial schools have as yet failed to utilize to the full the possibilities of this subject. Generally speaking, only piecemeal courses of customary college type are offered, when what is needed is a thoroughly graded course, continued through several years. It may well be that some other branches of study may have to yield a place to this new subject. I do not think it would require a great deal of argument to show that mathematics, for instance, has less to offer the intending business man than has economics. The refinements of economic theory will, of course, find little place in the secondary course. The work should be concrete throughout and closely related to the practical side of business training. It should give much attention to what might be called economic geography. I am well aware that the so-called commercial geography, as it is usually taught, is comparatively valueless. It is of little consequence for a student to acquire a lot of facts from a textbook about the statistics of trade. They are soon forgotten and contribute very little toward business training.

As typical of the sort of economic work I have in mind, I would cite the course we give to first-year students in our school, as described in a statement prepared by the head of our economics department. It is grouped around two main ideas—New York as a manufacturing city and New York as a commercial city. We begin with a report on the occupations of the boy's family, his friends, and his neighbors, and a study of the industrial life on his block. The student is given the problem of classifying the occupations and grouping the workers according to his classifications. He is then required to study and express graphically the figures from the United States census and the state census for gainful occupations in the United States, New York state, New York City, and Manhattan and Bronx boroughs. Then he combines the figures collected by the boys of his section (40) and his class (500). The results show, of course, that the manufacturing and mechanical pursuits and trade and transportation are the great groups of city industries.

We take manufacturing first as being most interesting to the

boy, and we begin the study of the problem of the manufacturer from a table specially prepared by us from the census report on the concentration of important manufactures in forty-seven cities. The problem is formulated as the assembling of raw material, power, labor, and capital at a place convenient to the manufacturer's market. Each of these factors is studied in detail. The following are some of the topics discussed under labor: population; its composition; its growth from immigration, from migration, and from excess of births over deaths; the effect of an increase from each source upon the efficiency of the workers of the city; the location and distribution of the labor force throughout the city; the effect of the sanitary regulations of the Board of Health and housing regulations of the Tenement House Department, etc., the systems of employment; why the help, handicraft, and domestic systems still survive in this city; the important manufactures of this city, together with the kind of labor they use, and how the labor supply has affected them; what manufactures are leaving the city on account of the labor; what manufactures are coming in because of an abundant supply of cheap labor; the distribution of manufactures throughout Manhattan and the greater city, and how this distribution is related to the distribution of labor; how transportation improvements modify this distribution, etc. In a similar way are treated the problem of a supply of power, of a supply of capital, of a supply of raw material, and of access to a market. The natural advantages New York has for commerce—its harbors, its inland waterways, its situation, and its hinterland with its products—is the first topic taken up in the second half-term. The improvements of these natural advantages and the sharing of the work of improvement on the high seas, throughout the hinterland and in the harbor by the national, state, and city governments, respectively, is the second topic. The general idea of a great seaport that the boys formulate from a study of the great ports of the world is that it is favorably situated on the coast where it can draw unto itself the products of the near hinterland and distribute them over the world, and that it gathers together the products of the lands beyond the seas, and distributes them over the near and far hinterland. These topics are worked out in detail like that of the labor supply, already described. The course is concluded with a simple outline of the work of banks, trust companies, and stock exchanges in supplying the necessary capital for manufacture and for trade.

The boy has now secured a generalized and systematic view of the trade and manufactures of his city and has obtained a fund of detailed and specific information about the part he and his neighborhood play in making New York a great city. The boy is studying an economic unit, the metropolitan district, and he is comparing it, whenever possible, with the United States and the world. He has learned to use statistics compiled by others and he has helped compile some of his own. His generalizations are economic generalizations, he has learned to formulate economic principles, and he has observed the operation of economic laws. We believe that this study has supplied him for his future study of economics with a concrete background, which will be filled out in the later years of the course by the study of his civic environment and his more formal study of commercial geography of the United States and of the world.

This method of beginning economics can be applied in almost every school. The local economic unit will furnish all the material that the teacher can utilize. It means work for the instructor, but the trained and enthusiastic teacher will find the task full of interest to himself and to the pupils.

Following upon the study of the city comes a similar study of New York state. The chief extractive industries are considered—farming, fruit-growing, lumbering, mining, etc.—and later the most important manufactures and the transportation and banking facilities. After this study of local commercial geography, the student is ready to go on to a consideration of the economic geography of the United States, taking up such topics as physiographic regions and conditions, location and distribution of manufactures, marketing, transportation, exports and imports. He will be called upon to make a careful study of some one particular topic, using material to be found in governmental reports. This particular work is scheduled for the second year. In the third year he will make a careful study of the principal countries having commercial relations with the United States.

The study of economic geography gives the pupil an excellent preparation for the short course in economic theory prescribed for the first half of the fourth year. By way of concluding the work the final half-year is devoted to the trust problem or corporation finance and the money and banking questions. That high-school seniors can do intelligent and profitable work of this character I think has been clearly demonstrated. Perhaps no other subject is comparable to economics in the inspiration it

gives the student to go on with his studies after the secondary-school days are over. I find our graduates practically unanimous in testifying to the great practical value of the economics course pursued by them.

So much for the course of study. Of exceeding importance is the method of teaching. There must be a careful avoidance of the tendency to make commercial training merely or largely informational. The teacher in a commercial school who does not consistently employ the problem method in instruction, who does not strive for the secure real thinking, may be doing something interesting but he is not training business men.

Much might be said with reference to certain auxiliary features of the work of a commercial school—its relation to business organizations and business men; its study of vocational opportunities, and its touch with its graduates in the business world. During the past few months we have gathered a mass of interesting information from such of our graduates as we could reach, touching upon the character of the work they are now doing, their progress since graduation, and the scope and quality of their school preparations as tested by their actual experiences in business. Our most helpful critics are not the business men, but our own graduates, who are able to speak definitely of the strength or weakness of the courses prescribed in the commercial curriculum.

In conclusion I would say that the commercial school ought not to limit its activity to day instruction. In every city there are hundreds of young men who would profit immensely by the opportunity of securing instruction in evening courses. Many of these have been day students who were obliged, through necessity, to cut short their school career. Many are graduates of general high schools and colleges, who would gladly add to their business equipment. Perhaps the day may come when the commercial school may be able to give continuation courses, as is done abroad—say from four to six in the afternoon. If employers could be made to see the advantages of this arrangement, the way would be easy. In this direction some attempt at least should be made to widen the usefulness of the commercial school.

"EDUCATION FOR BUSINESS." THE BOSTON HIGH SCHOOL OF COMMERCE¹

The Boston High School of Commerce was opened in September, 1906, with 142 pupils. Its membership in succeeding years has been 332, 554, 721, 967, and 1078. Owing to lack of accommodation, the school has been obliged to deny admission to at least 500 boys during the last three years: at present two main divisions of the school are one-half mile apart. These few statements show to a certain extent the demand in the city for the kind of work the school is doing. The object of this paper is to tell as directly as possible what that work is—to show how one school is trying to fit high-school boys for business. The paper tries to set forth some educational practice rather than educational theory. It seems to me eminently fitting to put on the market reports of a few educational experiments at the present time when so many new theories are being launched forth by educational promoters.

In its earlier years, the school was popularly called Commercial High School, and even some official publications of the city used that name. The first head master of the school insisted that this was a misnomer. He maintained that a commercial high school centered its work around such distinctly commercial subjects as bookkeeping, stenography, and typewriting, and prepared for secretarial positions; or, as one of the boys of the school said recently in class, for the passive side of business. A high school of commerce on the other hand, he maintained, offers a more liberal course and prepares for the competitive, or active, side of the business. A high school of commerce includes all the work of a commercial high school and more. This point of view has been quite generally accepted in the city so that we now hear but seldom any name other than the High School of Commerce.

The aim of the school can be stated briefly: to give its pupils the best possible preparation for a career of business usefulness.

¹ By James E. Downey. *Journal of Political Economy*. 21:221-42. March, 1913.

in Boston, either municipal or metropolitan. This statement of the aim carries with it the thought that the school takes no concern about any of its pupils who may wish to go to college. That work is being done well by other high schools in the city and boys who may wish to go to college are expected to go to one of these schools.

It is not the attitude of the school that the boy must necessarily show some very decided business bent in elementary-school days to warrant his attendance at the High School of Commerce. The demand for service in the business world is great and varied: if a boy has a general notion that he wishes to enter upon a business career, the school is pleased to receive him, to train him as well as possible, and to try to place him in that avenue of business activity where he can use his capacities to best advantage.

The school does not promise to get the boys positions; that would be unprofessional, and the promise would be a hard one to fulfil, since the actual hiring of boys is done by agencies outside the school. Our promise is to do our best to secure positions for such boys as make a satisfactory record with us. Thus far our graduating classes have numbered 19, 9, 41, 91, and 113, and no boy can rightly complain of the way that promise has been made to apply to him.

The course of study is largely a required one. This is so for two reasons. First, the teachers of the school, as a result of their experience and investigation, know better than boys or parents what steps are necessary to take them from the level from which they came to the level for which they are ambitious. Second, a man in business often has to do things that he does not like or that he is not fitted for if he wishes to discharge properly the responsibilities of his position in life. For this same reason we offer no apology to boys for asking them to do work that they do not like, or that they are not fitted for, when we think that such work is necessary for preparing properly for the responsibilities of business life.

When they first enter the school, they choose between Spanish, German, and French. Whichever they take they have to study for their entire four years. This choice is the only one that they have during their first two years. Their other studies are, in the first year, penmanship and elementary bookkeeping forms, elementary science, mathematics (largely commercial

arithmetic) and English; in the second year, history and commercial geography, mathematics (largely commercial arithmetic), bookkeeping, and English. The third-year studies are bookkeeping, typewriting, chemistry, and English, in addition to the required modern language and to stenography (to be followed two years), or geometry, or advanced arithmetic. In the fourth year, besides the modern language the studies are economics, commercial law and civil government, English, and typewriting, and, as an additional subject, stenography (continuous elective), or bookkeeping, or chemistry, or solid geometry, algebra, and trigonometry. During the last two years, instruction is given in commercial design, but this is an extra study which does not count toward a diploma.

During the course, lectures are given to the pupils, a report of which will be given separately. Our course of study calls for a fifth-year special course, designed primarily for graduates who wish to come back to school and take a part-time course, and for graduates of other high schools. At present it seems inexpedient to encourage this course.

Practically all studies require five meetings a week. Each pupil is expected to carry five studies.

When the school opened, in 1906, the school session in practically all the city high schools was five hours in length, and it was so in the High School of Commerce during the first year. It was pointed out to the school during the year by certain business men that such hours were hardly consistent with the business hours of the city, and they recommended a longer session. Those intrusted with the management of the school recognized the argument and accordingly recommended the present hours to the School Committee, and the recommendation was adopted. The school now is in session five hours and fifty-one minutes—from 8:55 to 2:46. Of this time, ten minutes are given up to opening exercises, 44 minutes to recess and passing, and 10 minutes to light gymnastic exercises. The remainder of the time is divided into seven periods of 41 minutes each. These hours and the home lessons suggest such a plan of life as this for the boys: rise not later than 7; play after school until 5; study from 5 to 6, and from 7 or 7:30 until lessons are finished; and retire not later than 10.

School spirit is one of the very valuable assets of any school. Each school has its own distinctive spirit and its own ways of

fostering it. A school which fits boys for business must have an individuality peculiar to its problem. Special study is therefore given to the question of having the school spirit help in turning out such young men as are expected from the school.

A boy should leave the school with a spirit of being willing to work and of being willing to take whatever tasks are given him to do, within proper limitations; he should take up his work with pleasure and enthusiasm; he should be intensely loyal to his employers, and he must measure his worth by results rather than by hours. It is the function of the school spirit to help contribute these factors to the boy's preparation.

The school spirit of the High School of Commerce is aided by a number of features which may be touched upon briefly. Decided effort is made to keep the pupils happy at their work, while the same effort is made to keep them working all the time. Musical associations are strongly encouraged, and about one-tenth of the school, during school hours under the direction of one of the teachers engage in some one of the musical activities of the school, which include a band, two orchestras, two glee clubs, and a string quartet. Athletics is strongly encouraged and practically all the boys of the school belong to the athletic association. No boy whose school record will not warrant it is allowed to represent the school in the practical work, about which more information will be given later. The ideals and habits that go to make up a successful business man are those which are insisted on throughout the school. All these forces working together throughout the school hours and through the medium of studies, most of which are in the course of study for their vocational value, have produced a school spirit which is very helpful in preparing boys for their life-work.

In a vocational school, there should be practical work. In a high school of commerce, the opportunities for such practical work are very great. If the co-operation of the stores is necessary, the merchants of the city are most willing to co-operate. In Boston, however, the work is able to stand on its feet on account of its own real worth. In but very few cases are the boys of the school taken into a store for practical work merely as a courtesy to the school. Usually the boys earn whatever they are paid. The courtesy from the stores—and it is courtesy we very much appreciate—takes the form of coming for their help to us rather than to the other possible sources in the city.

It almost seems to me that the possibilities of this practical work in connection with the school are limited only by the efforts of the teachers and pupils working together in searching out the possibilities. More and more are the boys looking out for themselves in the matter of getting this practical work. The concern of the school seems to be more and more to foster the tradition in the school that a boy who looks after himself in this regard gets more credit in the official records of the school, on account of initiative shown, than a boy who is placed by the school. The school further concerns itself with so systematizing this practical work that it will be of as much value as possible to the boys.

This feature of practical work finds expression in four principal ways: Saturday work, occasional assignments during the year, work at Christmas, and summer apprenticeship work. In addition, many boys do after-school work; but this work is fraught with so much danger to the boy's progress in school that official notice is not taken of it.

By all means of getting practical experience, the boys of the school earned between \$35,000 and \$40,000 last year; at the time figures on this question were collected, there were about 900 boys in school.

Saturday work is very much encouraged. Work at Christmas time depends on the boy's standing in his class work: only the boys of such a grade of scholarship as warrants it are allowed to take this work. The boys who are sent out for a day or two at a time during the year must also maintain such a grade of scholarship as to warrant it. It is from the summer work, however, that we expect our greatest returns. The importance of this feature can be estimated when I tell you that 65 per cent of the boys worked during the past summer. The 397 boys working under this scheme earned nearly \$17,000. This made an average of over \$5.00 per week for each boy while he worked. This figure compared with about \$10,000 earned the summer before by 352 boys. Moreover, the boys found more of the positions for themselves this past summer: where four years ago the school placed directly 75 per cent of those who worked during the summer, this year the school placed 20 per cent. The efforts of the teachers are now concerned with directing a boy how to find a summer position and where to find one, rather than to find it for him.

This practical work of the school is one of its important fea-

tures: boys plan for it as they do for their other school work. A boy who has had no practical experience before he graduates from the school is considered more or less in disgrace, and is the rare exception.

Boys bring back reports for all employment work to which they are assigned; these reports, filled out by the employers, are placed on file and are consulted from time to time as the need arises.

The regular classroom work is supplemented by special lectures, which make a decided contribution to the school. Some of the lecturers are paid and some contribute their services. The general purpose of the lectures can be best explained by giving the general nature of several of the courses. One series given to the Seniors is made up of ten lectures on transportation in New England, six on advertising, six on salesmanship, and about twenty on commercial possibilities in South America. Another series of lectures given to the Seniors is made up of ten lectures on "Economic Resources of the United States" and about twenty-five lectures under the general head of "Office Routine"; in this course are explained various details and incidentals of office work and convention, with demonstrations of advertising and salesmanship. Another set of lectures is given to the Junior class under the general head of "Local Industries"; it comprises six lectures on the leather business, three on textile industries, three on banks of Boston, three on historical, commercial Boston (illustrated), and about twelve on various industries of New England. Another set of lectures is given to the school as a whole upon general business, economic and civic subjects.

Too much importance cannot be attached to the need of an efficient teaching staff. Of much more importance than a suitable building, a favorable location, a proper course of study, abundance of books, supplies, and equipment, is proper instruction for the special need of a high school of commerce, teachers are not yet trained. It will be many years before we have a set of teachers trained for this particular line of work as well as those are trained who are engaged in the classical education. We who are now at work must do our best to meet the oncoming competition in this line of work and also to gather such experience and information as will enable the next generation of teachers to work more effectively.

To get the necessary kind of teachers, adequate salaries will have to be paid. At least six of our teachers have had offers from business houses at advanced salaries. A city will get in the way of instruction just what it pays for. If it wants only \$1,000 work done, then \$1,000 is enough for salary; but if it wants the benefit of service which is worth \$2,000 or \$3,000 in the open market, then it must not expect to get it by offering a salary of \$1,500 or \$1,800. If it wants as teachers men who can prepare boys to take up the more responsible positions in business organizations, then it will have to offer suitable salaries. The past year has seen perhaps a greater advance in teachers' salaries throughout the country than any year ever before. While we are in the midst of this movement for better salaries for teachers, I wish to enter a special word in advocacy for a salary that will attract suitable teachers into the work of a high school of commerce.

A teacher in a high school of commerce must be equipped with a liberal education and good habits of study, and he must further be an authority in the line in which he teaches. He should belong to the distinctly commercial or semi-commercial bodies in his city; he should form a business acquaintance with the best firms of the city, and should frequently be seen in the gatherings of business men; and above all he should have a great love for his own city and full confidence as to its future prospects.

One of the questions that is immediately asked about our school is: "What are the alumni doing?" When this question is put to me, I am not sure what kind of answer is expected. The people before me know it takes time to train a person for a particular career. The school has been in existence six years. Its aim has not been to instil into the minds of its pupils get-rich-quick ideas; its object has not been to be able to gather as quickly as possible a set of statistics showing what wage the boys have received year by year after graduation, and showing how the wages compared with those of the boys of other high schools. Such reports as these appeal to me as being more or less sensational rather than professional. The aim of the school has been above all to develop a man, to give him such a fund of knowledge about his own city as was possible, and to give him such vocational instruction as he could assimilate in the four years he was intrusted to our care. We do not mean to say that we are not watchful over our alumni. On the contrary, we are

very watchful. When we think that they are not progressing so rapidly as we think they should, we try to find the cause and remedy it. When we think that they are trying to progress too rapidly, we do our best to set them right.

In general, I should report of our graduates that most of them go into the distributive side of business. Very few go to college.

Our principal way, at present, of getting information about our alumni is through a general letter in which we ask the following questions:

1. Mention places employed since graduation, giving dates. Give pay received.
 2. Have you worked for any of these concerns during your summer vacation?
 3. If you have changed houses mention the reason.
 4. What parts of the school training have been most useful to you in your work?
 5. How could the school have helped you more than it did?
 6. Are there any opportunities for summer employment or permanent positions with your firm. To whom should communications be sent?
 7. In what lines of work do you find good opportunities for alumni of this school?
 8. Can you give any information regarding other alumni?
- (Additional suggestions and information will be gladly received.)

Information like this will be asked for from our alumni during the first, third, sixth, and tenth years after graduation.

One of the lessons we try to teach is that of thrift. This is done in one way by not making continual appeals to attract away a part of the weekly allowance of the boys; in a second way it is done by encouraging the boys to make weekly deposits in the school savings bank. The object and work of this bank can best be shown by making a few extracts from a circular letter sent to the parents of all the pupils in school:

The bank has now been in existence in school for nearly a year. The extent to which it has been used by the teachers, pupils, and organizations of the school has more than fulfilled expectations. During the year there were 25 bank days; the total deposits were \$2,862.11; 342 accounts were opened; \$210.70 was drawn out during the year; the balance in the bank at the end of the school year was \$2,651.41; the total number of deposits during the year was 1,968; the average daily individual deposit was \$1.44; the average daily total deposit was \$106.49; the average total deposit of each depositor was \$8.37; average total withdrawal of each depositor was \$0.64; average net deposit of each depositor was \$7.73.

One day each week is known as "Bank Day," and during one period of that day, pupils desiring to make deposits go from their several rooms to

the banking-rooms and make their deposits, the amount of each deposit being entered upon a "Deposit Card" which will be kept by the pupil. The money so received is deposited in the Home Savings Bank in my name as trustee. When the total amount deposited by any one pupil amounts to \$3.00, the Home Savings Bank, on the last "Bank Day" preceding the quarterly dates on which money goes on interest, will issue a depositor's pass book, and thereafter when the amount deposited by him equals the sum of \$1.00, it shall be transferred by the bank to his pass book. Deposits made by the pupils may be withdrawn in whole or in part on any "Bank Day" by an order signed by both pupil and parent or guardian. Deposits of five cents and upward are received. On "Bank Day" the Home Savings Bank sends a representative to the school to receive the deposit of that day, but all clerical work connected with the receiving of deposits is done by pupils chosen for their fitness to do that work. In order that the pupils of the school may, in addition to cultivating habits of thrift, gain practical experience in banking, as much of the work connected with the operation of the bank as is expedient is done by the pupils. They have already elected a Board of Trustees, each home room having a representative on the board, and this board has elected its own officers, a president, vice-president, secretary, treasurer, and assistant treasurer.

To aid in assuring the success of the High School of Commerce Savings Bank, we ask your earnest co-operation by giving the boys all the encouragement you can. There are numerous little ways in which boys can save if they are reminded of them, and it should not be difficult to show them the wisdom of doing so. We earnestly believe that the teaching of thrift goes hand in hand with the training for business which the boys of the High School of Commerce are receiving, and we think you will agree with us that in no way can the school be of greater or more permanent benefit to its pupils than by helping them to form early in life habits of thrift and economy.

Finally, the High School of Commerce Savings Bank does not wish to interfere with any scheme of saving which certain boys of the school may be carrying out. In such cases, it is for the boy and the parent to decide as to whether it would be a wise thing to transfer his savings to the school savings bank.

The heads of departments of the school, with their respective departments, are as follows: Oscar C. Gallagher, English department; Joel Hatheway, Modern Language Department; Winthrop Tirrell, Economic and History Department; Newton D. Clarke, Mathematics Department; Raymond G. Laird, Business Technique Department; Owen D. Evans, Science Department. The work in salesmanship is in charge of Maurice J. Lacey. The men have submitted the following brief reports in answer to the question, "How is the work for which you are responsible meeting the needs of the school?"

Business Technique Department

The function of the department of business technique is to ascertain the requirements, in the way of clerical training, that a typical business man would place on the output of our school, and to meet that demand in so far as practicable.

Good handwriting is always demanded. In addition to the half-year of instruction that the pupil receives, he is required, in connection with his various studies, to do his written work carefully and in accordance with the style of the adopted forms. In the Senior year, that he may be sent out to his first position a credit to himself and to the school, one period each second week is given to a review of penmanship.

Bookkeeping is taught with the double purpose of giving a training in a bread-winning vocation, and of giving to those who may never become practitioners, such an understanding of the methods and purposes of accounts that they may not be at a disadvantage from the operations of dishonest bookkeepers, and that they may comprehend to the fullest extent the conditions reflected by business and financial statements. Pupils are drilled in drawing up a large number of forms and papers incident to several types of businesses. Study is made of the accounts of retail and wholesale trading businesses, of commission concerns, and of manufacturing enterprises. In all these instances, the transaction comes to the pupil as nearly as possible in the form and manner that it reaches the real business house, and he disposes of the clerical end much as if he were engaged in an actual office. A large amount of very valuable information is secured regarding the administration of these businesses and of the routine of their counting-rooms.

That portion of the student body that selects the secretarial course gets the same clerical training as above outlined to the completion of the third year and in addition phonography is taken during the third and fourth years. The dictation given these pupils includes correspondence from a considerable number of businesses, from editorials of leading daily papers, and from congressional matter. The thorough use of one make of typewriter is required, and some familiarity with one or two others is given. Plans are being made to introduce a phonograph office machine for use in connection with the work of this department.

Mathematics Department

The department of mathematics has defined its problem as an attempt to train boys mathematically for the work which they expect to enter. This, from the purpose of the school, means to nearly all the students some form of commercial employment. About 10 per cent may have a higher school in view, and for such boys the usual fitting courses are provided; but these courses, having nothing distinctive, may be disregarded in any discussion of the work of the department.

The work of the first two years is a continuous course in arithmetic, and in such topics of algebra, geometry, and commercial arithmetic as can be related to the course and serve to extend the mathematical training of the student.

We need here to define what is needed and aimed at in this training. By general agreement among business men, the one mathematical requirement is accuracy. Rapidity is a very minor consideration. Neatness is, of course, an important quality. It is, however, plainly not a special mathematical quality, but extends to all work. But the general demand of business men is for boys who can get things right. Now the problem of obtaining accuracy is one of training. The boy must be given problems which he can do, and he must be trained to get them invariably right. The average pupil entering the high school has developed no conscience in this particular. He is satisfied to do his work, and take the chances of its accuracy. To develop such a conscience is one of the most difficult problems which we have to meet, and is the aim of all our work. It is not that the boy is unable to do correct work, but that he is indifferent to incorrect work; and he must be trained until the habit of checking, repeating, and revising answers becomes his settled habit.

The method taken is largely that of individual problems. These problems are kept in sets, similar in scope and difficulty, but each different, and each boy is given one to compute and get the correct result. To give more interest, and impart information, the problems are drawn from sources in which the boys are interested. Some of the sources are: the reports of the Chamber of Commerce of Boston, the reports of the Department of Commerce of the United States, and the reports of the Department of Agriculture.

When a boy has completed the two years' course, we expect

that he can do these things and do them correctly. He can add, subtract, multiply, and divide integers, decimals, and common fractions with small commercial denominators. He can compute simple and compound interest; he can reckon commercial discounts; he can figure the bank discount on a note; he can solve the usual algebraic equations, and can express ordinary problems in algebraic terms; he can intelligently interpret and compute formulas; and he can use geometric principles in computing such areas, angles, and lines as ordinarily arise in life.

This will seem a very small extension of the grammar-school work. But the whole purpose of the mathematical department is to train a pupil to do the few things that he will need to do in the business world and to be absolutely sure of the results of his work.

Science Department

Since our boys are preparing definitely to enter the business of buying and selling rather than that of producing, they need chemistry rather than physics. In order to allow for the course in chemistry, program requirements forced us to place the physics in the first year; so it is very elementary.

All first-year pupils are required to take fifteen weeks, with five recitations per week, and without laboratory work, in physical geography. The objects are to teach the boy how to get a home lesson, to give him elemental facts in the subject, and to show the relation of the subject to the production of commercial commodities. Then follow twenty weeks of conventional physics, with four recitations or demonstrations and one laboratory hour per week. The subject-matter is diluted to fit the pupil's time and ability. There is individual laboratory work with suitable notebook record. This subject so treated is so fundamental that little attempt is made to make it commercial. It cannot fail to be vocational in its content.

All third-year pupils are required to take a full year of chemistry, with three recitations and a double laboratory hour per week. We do not believe in giving commercial tests before the pupil is grounded in elementary theory; so the first object of this course is to drill in fundamentals. After six months of such work, the pupil has lectures and reference-book work on

important local industries, with commercial tests in the laboratory. The topics are paper, glass, fermentation, sugar, milk, petroleum products, fats and soap, dyeing, etc. Such laboratory exercises are given as the Halphen test for cotton seed, the test for formaldehyde in milk, the Babcock milk-fat test, making soap, dyeing, the Fehling quantitative test for invert sugar, etc. Typical industries are visited. The object of the work is to give the pupil a slight idea of the scope of such work, so that if he wishes to elect fourth-year chemistry he may know what to expect. We devote the last two months to descriptive study of the metals, and the laboratory work is an elemental outline of qualitative analysis designed to give some little skill in methods, some knowledge of the relations of the metals, and to drill the fundamentals of chemistry.

Through the entire school the work becomes increasingly vocational as the pupil advances. Accordingly, fourth-year chemistry is elective for pupils who have shown interest or power in that line. The purpose is not to turn out expert or half-trained chemists, but to give the kind of training a prospective buyer and seller of merchandise will find valuable. Consideration is given to the buying of supplies on the basis of a scientific test; in other words, scientific efficiency in buying is our theme. Our object is to be able to read understandingly a set of specifications involving contract for the purchase of supplies, to understand the purpose of the several tests there indicated, to know what tests are available for the buyer himself, and to know when the buyer ought to pay an expert chemist for an analysis. We take up from this point of view those commodities which Boston merchants handle: fuel, lime, cement, petroleum products, animal and vegetable oils, essential oils, packing-house products, soap, fermentation, starch, sugar, paper, leather, textiles, dyeing, paints, varnishes, rubber, general food products, dairy products, canned goods, preserves, coffee, cocoa, tea, spices, flavoring extracts, etc. We have three hours of lecture, discussion, and reference-book work, lantern slides, and pictures per week, and a double laboratory period. Where we can find sensible tests within the scope of the pupils' time and ability, we make them. Where the tests are too difficult, we may discuss their purposes and theory, or we may ignore them. We have on hand twice as much material as we can handle in any one year. The interest of the pupils is all that could be desired. We try

to be sane and sensible in what we undertake, and we feel that we are getting results which are well worth while. In the end, if we can turn out boys who are good raw material for a business house to break in, we feel that we have accomplished all that is possible.

We do not prepare boys for college and we pay no attention to college-entrance requirements; if we discover boys in the early years who intend to go to college, we advise them to go to another high school. But our course is broad enough and cultural enough so that if one of our boys discovers himself in his Senior year and wishes to go to college, he is able to pass his entrance examinations.

English Department

The course in English is determined by the life the boys have to live. It aims, not to fit them for this life, but to live it with them from the start. Thus practical dealing with business subjects runs through the whole four-year course. It is as possible to secure correct, clear, and forcible English in dealing with the tangible conditions that everyday buying and selling present, as in dealing with the hazier situations that the college-imposed classical literature too often suggests.

During the first two years special stress is laid upon oral work. Current events, reports of Boston's industries, explanations of salesmanship as the boys themselves have practiced it, and criticisms of advertisements in papers, window displays, and bill boards are constantly called for. Business letters—genuine letters—are read to the boys for criticism, and then rewritten and answered. A special commercial vocabulary is definitely developed. The natural talkativeness of the boys is directed toward debates, and throughout the second and third year inter-room debates are held weekly. During the third and fourth years, commercial correspondence is studied intensively, and with the aid of textbooks the boys are drilled in all the types of communication that they are likely to meet. In the fourth year, too, there is a course in advertising. The theory of advertising—with illustrations at every point—is treated in a course of lectures. Practical application of the points made is secured from collections of good and bad advertisements which the boys make and which form the basis of class discussion. After this the boys themselves write advertisements which shall

illustrate the points considered in the class. In all this work, of course, the principles of effective composition are taught, but the field from which the boys draw their subjects is the business world.

It is poor business to have the work done by one department broken down in another; so the English department and the others co-operate in maintaining a definite standard. The written papers in history, modern language, commercial geography, and economics are taken by the English teachers and corrected, and the grade of English work thus done on papers in another course is entered as part of the English record. Co-operation is carried on also by the English teachers assigning topics suggested by some other department and drilling the boys in making their answers not only correct, but effective.

Literature meanwhile is not neglected, but here the emphasis is different from that of the college-preparatory course. To enjoy a good book, and to be able to tell why he enjoys it, is what we expect of a boy. Certain books are required for careful class reading, among them several on the college list. Besides these, however, every boy must read one book outside of school each month and report upon it in class. The school library contains many volumes of perhaps second grade, as literary standards go, but of vital interest to the boy because of the appeal they make to the creative side of his nature through their connection with the scientific, industrial, and commercial world about him. As far as can be judged, this emphasis upon interest and enjoyment in teaching literature has not dulled the moral or imaginative sensibilities.

Modern Language Department

Each pupil in the High School of Commerce is required to take one modern language throughout the entire course. There are five recitations per week during the four years. A pupil is allowed to take only the one language. This is chosen at the beginning of the course. Experience has shown that with so heavy a curriculum as that of the High School of Commerce, two languages are not thoroughly learned. Our belief is that a more thorough and intensive study of one language is better in every respect for the pupil, and will be of greater value to him in after-life than superficial training in two or even more.

The training in the modern languages has two sides, the general and the special. The course is laid out as follows:

The first year is given to elementary grammar. This means in any language the inflection of nouns, adjectives, and pronouns, the conjugation of the regular verbs and the more common irregular ones, and the application of the simpler rules of syntax. In every language a certain amount of grammar must be learned and that thoroughly at the outset, for if it is not learned then it will never be acquired at all. The grammar is, however, taught somewhat informally in connection with the reading. A large amount of easy narrative is read. This serves as a basis for exercises in dictation, conversation, and composition. The main purpose of the work of the first year is to acquire the barest essentials of the grammar, to get a correct pronunciation, to acquire a good vocabulary of simple, common words and to attain ease and facility in their use.

During the second year this work is continued; the grammar is studied intensively. This is the grammar year. The reading consists of easy narrative. There is considerable reading at sight; the foreign language is used to a considerable extent in the classroom. There is work in composition throughout the year.

The third year is primarily a reading-year. The greater part of the reading material consists of fiction and modern drama. Through the texts read and through the composition work, an attempt is made to give the pupils some definite, reliable information about the country where the language studied is spoken; the course further aims to give them a practical working vocabulary of travel, or ordinary business transactions, and of everyday life. There is constant practice in hearing and in speaking the foreign language; and a large amount of composition work is done, including some general practice in letter-writing.

At the end of the third year, a boy should know his grammar thoroughly, be able to read average fiction, understand a good deal of spoken language, and be able to express his own wants, if not fluently, at least intelligently. The language training is such, that if he needs to leave school at this time he can go on and acquire and assimilate a large amount of special work unaided.

The fourth year sums up and applies in concrete form what the pupil has learned in previous years. The work consists of a study of the language as used in commercial correspondence,

advertisements, trade circulars, market reports, and newspapers. If time allows, a good play is read also. There is constant drill in conversation. The course in Spanish includes special drill in the vocabulary and forms of Spanish bookkeeping. At the end of the fourth year, the pupil should be able to read a foreign newspaper or average book with considerable ease, to understand well the spoken language, to speak with considerable fluency, and to write an ordinary business letter with reasonable accuracy and speed. He should know thoroughly the vocabulary of ordinary life, the ordinary business vocabulary, and have a broad and sound foundation upon which to build.

The nature of our course prevents us from paying much attention to the history of the foreign literatures. Some attention is paid, however, to the life and works of the principal writers and allusions to political or industrial history are carefully explained. In this way the work in modern languages is able, to some extent, to supplement the work of the other departments.

The results attained in teaching American pupils to speak foreign languages are not satisfactory. The chief reasons alleged are: first, the large size of our classes; second, the greater age of our pupils when beginning a foreign language. Neither of these reasons is valid. The main trouble is that for us the ability to speak a foreign language has no immediate or direct commercial or industrial value. Incentive is lacking. A boy puts his time upon those subjects which he knows will be of use to him. The prospect of making a living out of Spanish or German is too remote to appeal to a boy, despite the active and vigorous propaganda exerted in behalf of the former. Therefore, in our work we must be satisfied to make the modern-language work a means of careful discipline, a means of imparting valuable information, both special and cultural, about our neighbors, to awaken and stimulate in our pupils a healthy interest in, and respect for, our neighbors and competitors, and to give the learner the basis upon which to build an accurate speaking knowledge of the foreign languages, if at any time the need arise.

Department of Economics and History.

The purpose of this department is to give the young men who are going out from the school such a knowledge of present economic conditions that they will be enabled to handle better

the big problems of modern business. In addition to this we try to stimulate an interest in history which will lead the pupil to do outside reading for himself and take an intelligent interest in all questions which should appeal to good citizens.

These purposes we are accomplishing in the following ways:

1. Our course in general history (mainly mediaeval and modern), given during the first two-fifths of the second year, serves as the groundwork of our later study of industrial, economic, and commercial history.

2. The course in commercial geography, which covers the last three-fifths of the second year, gives an understanding of the products, resources, and commercial possibilities of various countries, laying special emphasis on the United States.

3. During the entire third year every pupil studies the history of commerce. In this course the development of commerce is followed from earliest times, and special efforts are made to show how our commercial institutions have developed from those of mediaeval times. Special emphasis is laid on the development of means of communication and transportation, dealing through exchanges, and the use of credit in modern business.

4. The first half of the Senior year is devoted to a study of economic theory. Our aim is to present this subject in the most simple and direct way with constant references to concrete illustrations within the range of the pupils' experience. During the second half of the year, the economic and industrial history of the United States is studied as furnishing the best illustration of the various stages of economic development. At the same time, it gives the pupils much useful information about their own country.

5. Courses in civil government and commercial law also come under the Department of Economics. The aim in the first is to give each pupil a knowledge of local, state, and national government which will enable him to fulfil his duties as a citizen intelligently. In commercial law we do not attempt to teach enough to enable a graduate to act as his own attorney. We rather try to show the boy that the subject is so intricate and complex that the intelligent business man will consult a lawyer when any legal question of importance arises. We also aim to give enough knowledge of the law to enable our graduates to have an intelligent appreciation of legal opinions given by their attorneys.

This brief outline shows in a meager way what the depart-

ment is doing. In addition to this, by co-operation with other departments, much is taught which adds to the pupils' fund of economic and general information. Trips to business houses and manufacturing plants furnish the best sort of illustrative material for economic theory. Practically all of the boys in the two upper classes have worked in business houses and can apply the theory learned in the school to their individual experiences.

We do not feel that our course is perfect in its present form, and we are constantly looking for ways of improving it. We do feel that as time goes on we shall be able to learn to what extent the work of the department is helping to turn out the kind of business men needed in the community, and that thus we may model our work more directly on the needs of the business world as shown in the experience of our graduates.

Salesmanship

That salesmanship is not solely an art, but is based upon scientific principles, is a fact that is now almost universally recognized in the business world. It is the knowledge of this fact that impels such stores as Wanamaker's in Philadelphia and the Jordan Marsh Co. of Boston to maintain schools for the instruction of their employees in the principles of salesmanship. Accepting the contention that, to a great extent, salesmanship may be taught, and alive to the fact that its graduates, for the greater part, are engaged in active selling, and that the same will be true of its future graduates, the school offers a course in salesmanship with a view to pointing out to the boys its basic principles that must be applied when their business life begins.

When the school was first instituted, and until the present year, the course consisted of lectures by a local business man who addressed the boys upon various matters of business life. This year, however, a new plan is in vogue. One of the faculty who has made a special study in the science of salesmanship, and of psychology and its application to salesmanship, and who, apart from the ideas gained from the literature on the subject, has obtained much information from conferences with business men, has taken charge of the course and is conducting it in both the Senior and Junior classes. Probably the chief advantage derived from the new plan is that the course is more systematized than formerly.

Near the close of the last school year, the third-year class

were given four preliminary lectures on salesmanship, preparatory to their summer work. Three of these talks were given by the teacher in charge, while one that dovetailed into the teacher's plan was given by a business man. The elements of salesmanship was the leading topic of these lectures. Ideals in business were impressed upon the minds of the boys with the hope that they might follow the road to success during their summer and later work and avoid the pitfalls that so often make failures of the novice in business. Other topics discussed in these lectures were: salesmanship, a science or an art; need of instruction in the principles of business; the classes of livelihood-earners; divisions of business; the inside salesman; the traveling salesman; steps in a sale; mail-order business; summer employment. The final word was an exhortation to the boys to gauge their summer work by the standards set before them in these preliminary lectures.

In the meantime, these same boys, who are now in the Senior class, have had practical experience in the business world and will have more in connection with the Christmas employment scheme. Then they will be ripe for the six final lectures in salesmanship to be given during January and February under the direction of the teacher in charge.

Present plans call for a division of these final lessons into four parts: one will assume the form of an "experience meeting," at which about a dozen boys will give brief talks on their experiences during their summer and Christmas work; another will be devoted to talks by a half-dozen graduates of two years ago, who will speak upon the actual conditions in business that await the boys upon graduation; another will consist of a supplementary lecture, a comparison of inside and traveling salesmanship, to be given by an experienced salesman; the fourth part will comprise three talks on the theory of salesmanship by the teacher in charge. These final lessons will complete the ten in the theory of salesmanship that the school offers its students.

Someone may conclude that the course in salesmanship is inadequate for a school with business aims. Let me add that, in conjunction with these lectures, the practical work afforded under the Christmas and summer experience plans is, in reality, a part of the course in salesmanship, since it enables the pupils to apply in practice the theories presented in the lectures. Viewing the course in this light, one can hardly call it inadequate.

Again, demonstrations of salesmanship that are in such favor at present are not provided for under the new plan. However, the numerous opportunities that the boys have for studying actual sales while working in business houses more than offset the lack of artificial demonstrations in the school.

As a final word, let me say, that, at present, the new course is in an experimental stage. Later thought on the subject may warrant a change. Moreover, while we realize that we cannot produce expert salesmen, and to do so is farthest from our aim, we feel that, by revealing to the boys some of the ideals of business life that lead to success and some of the obstacles that spell failure, we are not sending forth our graduates into a strange and utterly unknown world to perform tasks for which they are totally unprepared.



AGRICULTURAL EDUCATION

AGRICULTURE ENLARGES CONSCIOUS- NESS AND HELPS ADJUSTMENT¹

The study of agriculture enlarges consciousness and enables one to see much in what now appears little. Since man must live by the sweat of his brow and be housed, clothed and fed from the products of the soil, and since the amount of land is fixed while population is increasing, it needs no argument to prove that the study of agriculture enables one to become better adjusted to his environment and gives power to adjust environment to self. Education for culture is a noble ideal, but it is useless to talk of higher culture for the great mass of humanity until they are better housed, fed and clothed, and until they have surplus leisure and are taught to use that leisure rationally.

GENERAL INSTRUCTION IN AGRICULTURE²

A great fault with the district schools has been an inclination to think that anything close at hand is too mean and common to be considered as subject matter for instruction. The thought has usually been that the school should prepare the learner for some brilliant calling away off where things are better and life is easier and more beautiful.

As a result, the country schools have been educating boys and girls away from the farm. The new method is that of educating them to appreciate what is under their feet and all around them, through an intimate knowledge of the processes of nature and industry as carried on in their midst.

¹ From "Agriculture and Life," by A. D. Cronwell. Copyright, 1915, by J. B. Lippincott & Co.

² From "Farm Boys and Girls," by W. A. McKeever. Copyright, 1912, by The Macmillan Company.

One of the direct means of educating the boys and girls for a happy, contented life on the farm is to teach them while young the rudiments of agriculture. This method is actually being put into practice in thousands of the rural schools. The state of Kansas recently enacted a law requiring all candidates for teachers' certificates to pass a test in the elements of agriculture and also requiring that the rudiments of this subject be taught in every district school. Other states have similar laws. As a result of this and like provisions, there is now a tremendous awakening in the direction named. The boys and girls in the country schools are finding new meaning and a new interest in the fields and farms upon which they are growing up.

It is a comparatively simple matter, that of teaching the young how the plant germinates and grows, how the seed is produced, and how farm crops are cared for and harvested. Likewise it is easy to describe the elements of the various types of the soil and to show how these elements contribute to the life and growth of the plant. The question of moisture in its relation to the plant life, of insects harmful and helpful to growing crops and animals, of the bird life as related to the economic aspects to farming—all such matters can be easily taught to children by the young woman school teacher. It is only necessary for the latter to take an elementary course of instruction herself, to read a number of collateral texts, and to get into the spirit of the undertaking. In a similar manner, instruction in regard to farm animals may be given, the emphasis being placed upon the consideration of the types of live stock actually raised and marketed in the home neighborhood.

It must be emphasised that these matters relating to elementary agriculture and animal husbandry can be made just as interesting and quite as cultural as any of the subjects in the general curriculum of the schools. Wherefore, the rural dweller who catches the spirit of such instruction should lead out in the securing of public measures and public improvements looking toward an early embodiment of these new subjects within the prescribed course of study.

AGRICULTURAL EDUCATION¹

The principal purpose of agricultural education is to teach people to think straight on all matters pertaining to agricultural production and rural life, and this applies to the city people as well as to the country people.

We fall into an error when we assume that we are the first to have to meet the problem of the high cost of living. The problem is as old as civilization and has intruded itself as a serious factor into every civilization that has preceded ours. Plenty of food for everyone at a low cost is the newest thing under the sun and it also has been among the most transitory of things.

We have dealt with the problem of too few people on the farm and its results, high cost of living, as tho it were a matter in which the farmer alone is concerned. In truth, he is the only person in all the country who does not suffer from this cause. A situation in which there are too few producers cannot help being highly satisfactory to those who are engaged in production, just as a situation in which there were too few grocers would be entirely satisfactory to those engaged in the grocery business. Such a situation would be unsatisfactory to the user of groceries, just as the present situation is unsatisfactory to the consumers of agricultural products, the people of the city. It is therefore the man who buys the products of the farm who is primarily and almost solely interested in having a sufficient number of people on the land. He is quite as much interested also in the kind of people who till the soil as he is in the number of such people.

What City People Should Be Taught about Agriculture.

It is almost as important that we teach agriculture in the city schools as that we make it a part of the course of study for country children. City children should not be required to study the details of plant and animal production, but they should be so taught that they will have an interest in, and a general understanding of, these basic industries. City children should be made

¹ By Henry J. Waters, President, Kansas State Agricultural College. National Education Association. Proceedings. 1915:193-9.

to realize that they are dependent upon those who till the soil, not only for their food and clothing, but also for the materials which form the basis of most of the city's industries. Of the raw material used in American manufactures, one-half of 1 per cent is derived from the sea; 5 per cent from the forests, 13 per cent from the mines, and 81 per cent from the farm. The children of the man who answers the call of the factory whistle should be taught that not only the clothes which their father wears, and the food contained in his dinner pail, but also most of the materials which provide him a chance to work and afford the family a living come from the farm.

Those engaged in transportation should understand that it is the soil-produced material which affords them nine-tenths of their employment. Merchants should be taught that nearly all the goods they buy and sell came originally from the farm. The children of the banker ought to know that a large part of the value represented by every dollar which reaches the bank vault was produced in the country. They ought also to know that in the long run it makes as much difference to them how much of each dollar remains in the country with which to build the right sort of family life as it does how much of the dollar reaches the city with which to support a city civilization.

The city children ought to be taught that, tho the farmer has undertaken the most important task of any class, that of providing the world with its food, clothing and the raw material for its industries, he never has had, and probably never will have, much to say regarding the conditions under which he will perform that task. City children should understand that the way in which society determines the conditions surrounding the farmer will determine the standing and progress of both the city and the country. They should be trained to appreciate the limitations of farm production and to realize that conditions which they impose that are not to the best interests of the country people will not in the end be for their own best interests. They should early learn that no civilization has withstood the effect of the decay of its rural people.

Wastes are a Tax upon the Cost of Living.

Wasteful ways of doing business and extravagant ways of living are a tax upon the cost of living which somebody must pay. Either the consumer must pay more for what he eats—and he

already groans under the burdens of the high cost of living—or the farmer must take less for his products altho he already is lowest-paid man in the world.

The American farmer is a business man and not a mere laborer. He has invested in land, equipment, and working capital an average of approximately \$8,000, an investment such as fairly classes him with the business man of the town. He is entitled, therefore, to an income comparable with that of the average business man—an income which will enable him to support his family as well and to enable him to pay as much toward the support of the school, the church, roads, and the cultures of life as do the proprietors of grocery stores, drug-shops, meat markets, and of other business enterprises requiring no larger investment and no greater intelligence.

If society cannot pay the price for food which will yield to the farmer fair income, it is time society was looking into its ways of living and of doing business with a view to effecting such economies as will make this possible.

High Acre-yields Go With Low Man-yields.

City people have been thinking too much in terms of acre-yields and too little in terms of man-yields. They have not yet learned that as the acre-yield has gone up—the world over and in all ages—the man-yield has gone down. For illustration, the yearly farm income for all the land in cultivation in Japan is \$71 an acre, in the United States it is \$15, and in Kansas it is \$13.50 an acre. The average annual income of the farm family in Japan is \$235, in the United States, \$1,000 and in Kansas, \$1,560. To take another illustration, the average acre-yield of wheat in Germany is nearly 31 bushels, in France it is more than 29 bushels, and in the United States it is 14½ bushels. The average yearly income of the farm family in Germany is \$580, in France it is \$670, and in the United States it is \$1,000.

Intensive farming, therefore, is not the simple and easily applied remedy for all our present ills. Intensive agriculture is adapted only to conditions where lands are high and labor is cheap. It is essentially hand farming. It uses little labor-saving machinery. It produces comparatively little livestock and has not afforded an income sufficient to provide many conveniences for the farm home.

Intensive farming developed to a moderate degree has pro-

duced the peasant class of Europe, "the man with the hoe." In Saxony, Belgium, and Brittany, where intensive agriculture is more highly developed than elsewhere in Europe, the farm woman frequently serves as a draft animal and is hitched alongside a dog. Carried to its full limit, intensive farming has produced the Chinese and Japanese farmer, the type that can out-labor and underlive any other type of farmer in the world.

Extensive agriculture develops the highest form of rural civilization because it gives an income above the actual physical needs of the family. It affords the means for procuring the broader cultures of life. It is the kind of agriculture that uses much machinery and raises much live stock, and these in themselves develop the highest type of husbandman.

So long, therefore, as society is not made to suffer undue hardships on account of the high cost of living, a reasonably extensive system of agriculture is best for everybody. So long as a country can get along with farms of reasonable size, it is inadvisable to try to force upon that country an intensive type of farming. Indeed, no country has ever adopted this type of farming until forced to do so by the demands of the people for food and for an opportunity to work.

Society demands cheap food, and, in so far as cheap food may be provided without imposing burdens upon future generations thru the waste of our resources and without imposing undue burdens upon the people on the land, the demand is a reasonable one. Low cost of living, however bought without permanent capital of soil, mine, and forest, is temporary and wasteful. Low cost of living, purchased with the manhood and womanhood of the rural communities, is dearly bought and destructive of our best asset.

A sound system of agricultural education, therefore, stands squarely for high man-yields as well as for high acre-yields and seeks to prevent a rural class from growing up in America, a class that is different from, and antagonistic to, the city class. Every obstacle to the free intermingling and intermarrying of the country and town people must be removed. It must not be true that the town girl would rather marry a drug clerk or a city omnibus driver than marry an industrious young man with a farm. Conditions under which the best women are not content to live will not long attract good men.

Teaching Thrift

Agricultural education seeks to put children and the back yards and vacant lots to work, producing food to assist in reducing the cost of living, and to teach these children thrift, a quality so lacking in the American people. Agricultural education teaches the boys in the country how to market their products and should teach the girls of both the city and country how to buy for the family. It should impress upon every housewife the relation her purchases sustain to the development of local industries and should seek to eliminate much of the waste that we commit daily when we eat in California food canned in New Jersey and when they eat in New Jersey food canned in California. In Kansas, the leading broom-corn state of the Union, we send our broom-corn to Michigan to have handles made.

Apply the Laws of Nutrition to Raising Children

Agricultural education is contributing much to our knowledge of how to feed children, for, after all, the feeding of children so that they may reach man's estate well developed and strong follows the same laws of nutrition as have been developed for the feeding of pigs, colts, and calves, only we have worked out the scientific feeding of pigs and colts and calves.

Education the Basis of Rural Sanitation

The country must be made a more healthful place in which to live. It is of comparatively little importance whether or not city people understand the laws of sanitation and become interested in the enforcement of these laws, for organized society determines the sanitary arrangement of the home and the workshop, and forces the people to keep their premises clean. In the rural community, everything depends upon the education of the individual. There is no rural lawmaking body analogous to the city council or city commission. There is no inspecting agency corresponding to that of the city health officer, city dairy commissioner, or city plumbing inspector. Thus the one-room rural school, poor as it is, has burdens laid upon it that are larger than are the burdens laid upon the city school, efficient as it is.

Important as is the education of the city children in respect

to their attitude toward country people and country problems, this training is, after all, of secondary importance when compared with the education of the future farmer with respect to the methods he shall employ and with respect to his duties and obligations to society. He must be made to realize that he has undertaken a most important task and that he must discharge his duties efficiently.

What the Country Children Should be Taught

Consequently, country children will need to be taught how to produce high acre-yields without bringing themselves the evils of the intensive methods of other countries and of other times. They must be made to realize that their right to own land is an artificial right society may withdraw if they till the soil inefficiently or wastefully. They must be taught how deep to plow, when to sow, and when to reap, and how to produce plants and animals that may better serve man's uses.

Where Agriculture Should Be Taught

It is a narrow view which limits the scope of agricultural education to the field of activity covered by the agricultural colleges of the country. All such colleges laboring never so diligently and efficiently will not be able to train even the leaders required. The other colleges and the normal schools must help. The resources of the high schools of the country must be employed. When all of this is done, the problem will be very far from being solved, because only a few of those who are to farm ever attend a high school, a normal school, or a college.

It is only when a satisfactory system of instruction in agriculture is introduced into the school which the future farmers are attending, the one-teacher rural school, that we shall be planting generally the ideas which will ripen into better systems of farming. But this education must not stop with the farmer's children. It must extend to the farmer himself and to the other members of his family and must continue thruout the farmer's active life. The supreme test of a system of agricultural teaching is made when we apply it to the man on the farm.

Early Attempts to Teach Agriculture Were Unsuccessful

It is true that the early attempts at teaching agriculture were not highly successful, altho these attempts were made long after education in other lines had become well established. The failure was principally due to the fact that the farmer himself knew more about farm practice than did the teacher. This quickly led to the establishment of agricultural experiment stations, research institutions in which the application of science to agriculture was studied, where the reasons for the most successful farm practices were discovered, and where new and improved practices were devised. Thus for the first time in the history of education, a deliberate attempt was made, thru a well-co-ordinated system of scientific research, to create a body of knowledge in relation to a subject which it was deemed important to teach, but about which so little of a definite nature was known that it could not be taught successfully.

It is true that scientific research has been a part of the activity of most institutions of higher learning since the close of the Napoleonic era, or when von Humboldt, as minister of education of Prussia, sought by this means to rebuild Germany's prostrated industries; but there had not been before an organized, co-ordinated, and compulsory system of research as a definite part of a great educational program.

The success of the investigations in agriculture, especially in America, has been a wonderful stimulus to research activity in other lines.

Continuation Teaching in Agriculture.

As might have been expected, the first result of this suddenly stimulated activity in research was the accumulation of agricultural knowledge more rapidly than it could be absorbed by the farmers and adopted into their practices. A way had to be devised in which to get the man on the soil, who is largely muscle-minded and eye-minded, to adopt these new methods. As a result, a system of extension teaching, thru farmer's institutes, press articles, and farm demonstrations, grew up. It is only within very recent years—indeed, since the passage of an act of Congress by which the federal government joined with the states thru the agricultural colleges—that the effort to carry this knowledge to the people has become general and effective.

Thus, new as is the system of agricultural instruction, and halting as was its progress at the outset, it has already marked two distinct and important departures from educational traditions—one in the organized system of research thru which a body of knowledge pertaining to the subject was created, and the other in an organized system of extension or continuation teaching thru which parents as well as pupils were reached with this new-found knowledge. Both of these departures have already exerted a large influence upon general educational thought and practice.

A Stable Rural People

Agricultural education seeks to establish a permanent agriculture, and it recognizes that the first essential of a permanent agriculture is an intelligent, progressive, and contented people. To bring about such a condition among the rural people, it is necessary that these people have, as has already been stated, an income equal to that of city people in its power to procure the real satisfactions of life. Every attempt to keep up the country stock and to resist the power of the city to call the best the country produces on any other basis than this is unsound. Nearly every civilization that has preceded ours has tried the experiment and has failed.

But back of all questions relating to the securing of an income either thru greater efficiency as a laborer, or thru securing a fairer share of what that labor brings, stands the equally important question of the utilization of this income or the coining of it into higher standards of family life.

Rural people must be brought to realize that the country is not merely a place in which to work while accumulating the means with which to live in town. They must be shown how to expend the farm income in such a way as to give as satisfactory a life in the country as that which the town affords. The occupation of farming and life in the country need to be idealized, for it is what a man thinks of himself and his work which counts for most. A people never rises above its ideals.

AGRICULTURAL HIGH SCHOOLS IN ONTARIO¹

At present there are in the province of Ontario 10 high schools, 6 collegiate institutes and 5 continuation schools conducting classes in agriculture and the number is rapidly increasing. These schools are located in different parts of the province and represent 19 different counties. The attendance upon the classes is optional at present and the introduction of the courses into the schools is also optional, consequently the establishment of agriculture as a part of the high school course will proceed only so fast as public opinion will permit. The number of students now receiving agricultural instruction in the high schools is about 800.

At the end of the second year of the course there is a departmental examination which may be counted as a bonus subject. In 1916 about 190 students took this examination. This work includes experimental laboratory work, relating to the fundamental principles of agriculture, and is made as practical as possible.

A course in the middle school is also provided and is arranged for two years, but where conditions are favourable and students are able to carry the work, it is possible to cover it in one year. There is, therefore, practically a four-year course in agriculture arranged for the high schools, and the equipment is paid for by special grants distributed by the Educational Department when the requirements are fulfilled.

A further provision is made for agricultural education by the establishment of a "department" in the high school under the management of an Advisory Council composed of men engaged in agricultural pursuits. Such schools as provided the accommodation to carry on the department, are intended to be the forerunners of regular agricultural high schools. Quoting from the regulations we have this statement: "When the public interests necessitate agricultural high schools they will be duly established and liberally aided by the government."

At present one high school has organized a department and

¹ By J. B. Dandeno. *Agricultural Gazette of Canada*. 3:1002-3. November, 1916.

two others are making arrangements to do so. It should be said here that liberal financial encouragement is given by the Education Department towards establishing and maintaining not only a department in agriculture but also, on a similar basis, a department in household science.

Minnesota has now 175 agricultural high schools and no county agricultural schools. Wisconsin had several county agricultural schools, but has now only one. In Michigan the county agricultural schools have not been a success and there is now only one left. These three states are pushing as fast as possible the agricultural high school, which is nothing more than a high school giving a good course in agriculture. We have now in Ontario 21 such schools and this number would be increased enormously if agriculture were recognized as an elective subject for matriculation. In the three states mentioned agriculture has a standing similar to that of other studies and may be offered for matriculation.

The influence of agricultural classes is already being felt, for, in several instances, boys passing the entrance are attracted to the high school for a year or two, knowing that they will receive some instruction on the principles of agriculture. In schools where such classes are not yet introduced, boys similarly situated stop school when they pass the entrance, for if they go back to the farm the high school has little to offer.

FLATHEAD HIGH SCHOOL, KALISPELL, MONTANA¹

There is a county high school at Kalispell. It is called the Flathead High, after the aboriginal campers who just recently vacated the site. However, there is nothing peculiar about Kalispell's having a county high school, for all Montana has these places, where graduates from the rural schools are allowed the high-school education which for two centuries "back East" has been largely the special privilege of town boys and girls.

Recently I heard Mr. Cummings tell a farmers' convention about the work of the Flathead school. "A school should meet

¹ By Florence Clark. *Country Gentleman*. 81:467. February 26, 1916.

the needs of the community to justify its existence" is Principal Cummings' simple statement of the theory he has put into practice during the two years he has been head of the Flathead County High School.

Something for Every Student

His first efforts were directed toward getting every boy and girl into the high school. This he did, partly by systematic advertising in the papers; partly by riding 500 miles on his bicycle in a personal farmhouse-to-farmhouse canvass; partly by providing a high-school curriculum so diversified and so embracing that no student could help finding something in it that would attract him and fit him for usefulness in the world.

The usual college preparatory course for the one-seventh of the students who will go to college was retained. Six other courses were added to it for the six-sevenths who will not go: Agriculture, for the boy who will stay on the farm; normal training, for the girl who will teach the rural school; manual training, for the trades; domestic science, for the home; accounting, for the store; and stenography, for the office.

It was found there were a good many boys who had gone through the rural school but were debarred from taking regular high-school work because they were needed on the farm in the spring and fall. For these boys an eighth course begins in November and closes March fifteenth; it includes agriculture, farm arithmetic, manual training and English.

There were still some boys and girls who refused to come because they did not want to take all the studies in any course. As a last resort Mr. Cummings said to these: "There are no short cuts to education. You cannot get credit on the school records for work done unless it comes up to the standard; neither can you graduate from the school unless you finish the required work as laid down in some course. But if there is any study that you want and are capable of carrying, come in and get it." And they came.

To help the high-school pupils in their choice of a life work the successful men and women in the various occupations are giving vocational talks at the school. A vocational conference for girls, a county athletic meet and a county eighth-grade spell-

ing contest were held. A thousand people attended the spelling contest.

The normal training course as planned will eventually raise the standard of rural school teaching in the county. In the interval the Flathead faculty and students are making regular Friday and Saturday night trips to the rural schools to give talks and entertainments, dividing themselves into groups for this purpose. Vocational talks are to be added as soon as practicable. Many of the rural teachers are not qualified to teach agriculture. To meet their need the high school has opened its doors Saturdays, and classes in agriculture especially designed for them are held. Fifteen of the teachers are attending.

With the coöperation of the city library circulating libraries have been placed in the rural schools and the books are sent out to the homes by the teachers. In the farmers' short course lectures on reading in the home were given to stimulate interest in the use of these books.

One-third more students are enrolled this year than last; 25 per cent of last year's graduates are back taking special work; 65 per cent of them, Mr. Cummings says, will eventually go to higher institutions of learning. So far has the Flathead County High School traveled in the evolution of an institution that shall be a clearing house for the needs of the people.

STUDENT CREAMERY AT DULUTH CENTRAL HIGH SCHOOL¹

In the fall of 1914 the Board of Education of the city of Duluth, Minnesota, voted an appropriation of \$150 for the purchase of a creamery outfit such as could be recommended for a farmer with ten cows. The equipment, all hand power models, consists of cream separator, combined churn and butterworker, butter printer, ice box, Babcock tester, acidity test outfit, salt test outfit, moisture test scale, butter print scale, cream scale, cream cans, and minor utensils.

The agricultural department, then in its second year only, was already one of the most active divisions of Central High

¹ By E. P. Gibson. *Hoard's Dairyman*. 51:698. May 19, 1916.

School; and the new equipment was received with such interest and enthusiasm that in the 1914-1915 school year the embryo farmers made a total of 2,891 pounds of the best creamery butter in 170 churnings.

This record was recognized as a nucleus around which to build creamery practice thoroughly systematized and realistic; and the outgrowth this year was a students' co-operative creamery with a bank account, a sinking fund, and typical "articles of incorporation."

The Student Creamery Company of the high school is an organization among the boys of the agricultural department, similar on a small scale to the most approved type of farmers' co-operative creameries, for the purpose of obtaining both the manufacturing and the business experience of creamery practice. The student members produce the cream and milk by purchase, and sell to their creamery, profits from which they share in proportion to their respective patronage.

The idea belongs to Duluth, it being the product of co-operation between the high school instructor and the Bridgeman-Russell Company, local wholesale manufacturers and dealers in dairy products. To reward industry and efficiency, the Bridgeman-Russell Company agreed to furnish the best quality of cream at such price concessions as to enable the creamery company to pay student buttermakers common wages when full churnings are made, as well as to set aside a sinking fund of two cents per pound for the upkeep and renewal of the machinery that belongs, of course, permanently to the school. This makes possible a representative system of cost accounting, which places profits on a definite basis after allowing for cost of materials, labor, upkeep of equipment, etc.

In Duluth, cream rather than milk must be bought for the bulk of the churnings, because of the local big demand and high price for fresh milk. At the outset it is admitted that in the city proper the milk business is more profitable ordinarily than the butter business; and in skimming fresh milk with a view to ripening and churning the cream, it is necessary to produce high quality products and by-products and to market all these systematically if the receipts from buttermaking are nearly to equal those from a milk and fresh cream business. The lesson of the conservation of by-products here taught is a valuable one.

The following is the plan of operation for each whole milk

churning. Two students sell to the Student Creamery Company the required amount of fresh pasteurized milk, which they have produced by purchase through the D. C. H. S. Agricultural Club as agent. The agricultural instructor, who acts as advisory manager of the creamery, assigns these two boys to the churning. The milk is weighed and tested to determine its pounds of butterfat. Next it is warmed and separated, then both skim milk and cream are tested for butterfat. The skim milk and cream are promptly cooled, and, for the time being, set in the ice box. Previous to the churning the cream is treated with a pure culture starter and ripened over night to the correct degree of acidity. The combined churn and butterworker is a hand power model of the best factory type, and produces the choicest of creamery butter. Then follow the salt test and the moisture test applied to the butter, and the butterfat test of the buttermilk. Quality of product and losses of butterfat are carefully checked. The butter is molded into pound prints, which are corrected to a net weight of sixteen ounces on an inspected and sealed butter print scale. The butter in neatly printed cartons, and the buttermilk, are in big demand when the supply is greater than the home needs of the student members. The skim milk is best made into cottage cheese. The students pay retail prices into the company treasury for all the creamery products that they use or sell, and each two are responsible for the sale of and settlement for all the products of their churning. They are employed both as buttermakers and as "salesmen."

The Student Creamery Company is a popular organization with membership open to any boy in Central High School. It is entirely self-sustaining and has an ample sinking fund to repair and replace all creamery equipment belonging to the agricultural department. Each member pays a deposit of two dollars, the total of which "stock" is placed in a local bank to guarantee the credit of the organization. Cash received for butter and all other products is also banked to enable the treasurer to pay all bills promptly by check. A payroll is issued monthly, and there are monthly reports to the student board of directors. At the end of each school year the balance in the sinking fund will be turned over to the agricultural department, dividends will be declared, and the company dissolved and individual amounts of stock refunded.

The venture now two years old is an unquestioned success,

and the Students' Co-operative Creamery Company will each year be organized among the students in dairying for an active period of some two months, with the privilege of occasional churnings throughout the year, long enough to give each member a substantial short course in creamery practice.

The creamery, however, is but one of several strong branches in the agricultural department of Duluth Central High School, and is by no means allowed to monopolize the time of the students in agriculture.

WHAT THE COUNTY AGRICULTURAL HIGH SCHOOL IS DOING FOR MISSISSIPPI BOYS AND GIRLS¹

Forty-one county agricultural high schools have been established in Mississippi since the passage in 1910 of the law authorizing the establishment of these schools and providing state aid for them. The total enrollment in the four high school grades during the past session was approximately seven thousand, or an average of about one hundred and seventy per school. The enrollment of boarding pupils during the year just closed was approximately thirty-five hundred.

They represent an investment, in buildings and equipment of about \$2,000,000, and an annual expenditure for support of about \$350,000. Quite a number of new schools are being organized this year.

The law authorized any county in the state to establish an agricultural high school, and maintain same by a tax levy up to two mills. State aid is given from \$1,500 to \$2,500 to each school, the exact amount depending upon the number of boarders enrolled. The schools may be built and equipped by donations from communities bidding for the location, and by county bond issues.

The county agricultural high school is doing distinctly and effectively four things for Mississippi boys and girls.

First, it is bringing the blessings and privileges of a good high school education within the reach of every boy and girl,

¹ From article by W. H. Smith, State Superintendent of Education. *Progressive Farmer*. 31:816, June 24, 1916.

even those of limited means. Prior to the establishment of the agricultural high schools, the country boys and girls in Mississippi had very limited high school advantages. At the county agricultural high schools tuition is free and board is given at exact cost.

In the second place, the county agricultural high school is stimulating the agricultural and home activities of Mississippi boys and girls. The school has been of immense help to the government agents in charge of the boys' and girls' clubs. Through its four year course in agriculture, it is showing the boys the real importance of farming and teaching them the dignity of labor. Through its four year course in home science, it is teaching the girls how to make and care for a home, and is giving the instruction in all that pertains to home life.

Thirdly, the county agricultural high school is training Mississippi boys and girls for service as teachers in the rural schools in the state. Of course, few of the schools are as yet properly equipped to do effective work in teacher training from the professional standpoint, but by giving a full four year high school course embracing work sufficient to cover fourteen Carnegie units, the county agricultural high school is doing a great work in raising the standard of scholarship of the rural teachers. It is the purpose of the State Department of Education to encourage the establishment of a two year course in teacher training in the county agricultural high schools as rapidly as the schools are properly equipped for such work.

Lastly, the county agricultural school is doing a splendid work in preparing Mississippi boys and girls for college. A graduate of a county agricultural high school is admitted without examination into the freshmen class of any college in the state, including the state university.

Thus the county agricultural high school is really the people's high school, and thousands of Mississippi's boys and girls are eagerly embracing the opportunities offered by these splendid institutions of learning.

THE MASSACHUSETTS HOME PROJECT PLAN OF VOCATIONAL AGRICUL- TURAL EDUCATION¹

You are doubtless asking yourself whether the Massachusetts plan of vocational agricultural education has been thoughtfully undertaken and whether it is yielding practical results. It is a big subject. I have over four hundred and fifty slides on it. Those which I am going to show you are a very short set, selected almost at random; and I hope you will believe me when I say that they are not in any sense the best slides. They are simply a set of slides selected to fit the time assigned. The most I can hope for is to give you a quick flight over the field—merely a bird's-eye view of our plan and some of the results.

First, I invite you to consider a little symbolism which I have been using for the past four or five years in the effort to keep my own thinking straight on this subject of vocational education. Remember, we are considering a type of education presumably for pupils over fourteen years of age, namely, the secondary-school age. We are considering a type of secondary-school training. The typical high school of ten years or more ago was a classical high school, a general school devoting itself to cultural subjects. This we might symbolize by a capital C. We have looked up to it, and justly so. Because that type of school met the needs of relatively few, there were those who thought we ought to have a different type of education of secondary grade for those who desired direct preparation for life. Because, again, there were so many cases where the boys did not go to the high school because they saw in the high-school courses nothing that would be of use to them, as they viewed it, there have been those who have made new ventures in the field of secondary education in what has been called "vocational training." This we may symbolize by a capital V.

These vocational ventures in education had a marked effect on the high-school courses. You will scarcely find a high school today which does not show considerable differentiation of courses. The determining factor in this differentiation is the

¹ By Rufus Stimson. *School Review*. 23:474-8. September, 1915.

career likely to be followed by the pupil in after-life and the desire that the pupil shall receive direct preparation for that career. Several distinct needs are clearly recognized by almost every high school. We have the preparation for the classical college over against the so-called "Latin scientific course" preparing for the higher technical institution. There are the courses in home-making for girls, and the commercial branches for boys and girls. In fact, a fairer symbol to represent the high school of today would be some such modified emblem as a large C and within it a small v . Much attention is still given to the cultural purposes of the high school, but at least some recognition is given to direct training for the career the pupil is likely to follow.

Similarly, along with the most direct preparation for the career of the pupil in the vocational type of school there have come decided cultural or civic values. So evident is this that I think we must agree that the vocational school of today, in Massachusetts at least, must fairly be represented by a large V with a small c within it.

In view of this development there have been those who have urged the desirability of a balanced type of training—not so much time given as in the cultural type of school to general studies, not so much attention given to direct preparation for a calling as in the vocational type of school—a type of school, in short, which might be symbolized by a rather large C superimposed upon a V drawn to the same scale. So far as the Board of Education is concerned, we erase from consideration this middle type. We recognize two distinctive types of training in the secondary field, one represented by the large C and small v , the other represented by the large V and small c . It is with the latter that we are to be concerned at this hour.

The first slides will show you a series of pictures illustrating somewhat the equipment appropriate to the distinctively agricultural purposes of the vocational agricultural school.

The Petersham High School will interest you because President Eliot was one of the most distinguished men at its dedication. This school has a beautiful building, erected in part from funds raised by taxation and in part from funds subscribed by public-spirited citizens. A small greenhouse was provided. The school has at its disposal about ten acres of land, on part of which there are a number of old apple trees that have been renovated by the pupils, and on part of which the pupils have set out

a young orchard. I speak of this greenhouse, however, for the further purpose of saying that this is the only vocational school in the state that has a greenhouse, and because I wish to say at **this point that we have instruction in a number of places where the school has not an inch of land or a head of live stock of any description at the school, the work of the pupil and the instructor, in class exercises and individually, being carried out on farms—usually the home farms of the pupils themselves. A greenhouse may be an advantage, but it is not required for state aid.**

Outwardly the headquarters of an agricultural school or department may appear to be like any other school building. Once you are inside the schoolroom, however, you find yourself in a different kind of a room from the ordinary schoolroom. It corresponds more to the library-laboratory room or to the laboratory for the study of science. We cannot use ordinary school desks; we need more elbow room; we have to study pamphlet material, data which are available only in bulletin form. We have to keep accounts. That is, our pupils must have room to spread their material out before them. For this reason small tables allowing for each pupil a surface $2\frac{1}{2} \times 3$ feet are preferred.

In all cases you will find a selected list of agricultural publications and books with an appropriate filing system for ready reference. If you desired to see a good example near Boston of a well-equipped agricultural room, you could not do better than to visit the Concord High School Agricultural Department. There you would find, for example, an apple-packing table, made by the boys and used in teaching the boys. That table was also used at a short course in apple-packing given to twelve adult farmers who applied for it this last winter. In that same room you would find an admirable collection of samples of corn, heads of grains and grasses, samples of grain and grass seeds affording standards for ascertaining the relative purity of seeds available on the market, samples of vegetable seeds, samples of chemicals used as fertilizers, samples of spraying materials, samples of feeds; you would find spraying implements. Though a school may have no land it may be an advantage for it to have a pretty complete equipment of tools which may be lent to pupils whose money should be carefully husbanded for buying fertilizers or for other needs extending throughout the season, as over against the pruning shears, which may be used but a few hours or a few

days in a year. In this room, you would find poultry appliances, including incubators, different kinds of brooders, feeding-hoppers, and drinking fountains. Not the least important, you would find a rack for farm papers and an excellent selection of publications of this kind received from week to week or month to month.

Of course, "related study" materials include non-book sorts, and these require care and protection; uniform packages or mounts are an advantage and add to the attractiveness and apparent order of the agricultural classroom. Finally, there is a well-kept bulletin board.

Now you want to know what the course of study is. That is usually determined by the vocation for which the individual prepares. I am now going to deal chiefly with the home-project plan of teaching agriculture. The home projects are graded with reference to the relative risks involved, the younger boys, of fourteen or fifteen, being assigned projects which involve the least risk, those in the later 'teens or in the twenties being assigned the projects involving the heaviest risks, and the intermediate risks being distributed through the intermediate years between those ages. For instance, boys of fourteen or so study the elementary plan projects, such as kitchen gardening and ornamental planting. Here the big item is labor, and the boys themselves furnish that. In the next grade, at fifteen or over, they get animal husbandry, dealing with small stock, such as poultry, sheep and goats, swine and bees. In the third year they get advanced plan projects, such as small fruit-growing, orcharding and market gardening, growing fruit and vegetables for sale. In the fourth year they finish with advanced projects in animal husbandry, dairying, and general farm management and agriculture as a business. In addition to these supervised projects for any given year a pupil may carry out certain unsupervised projects on his own account, and he usually does. For instance, he carries on kitchen gardening, which is a first-year project, throughout the course; he may continue poultry-keeping, which is a second-year project, in the third and fourth years; and he may continue fruit-growing and market gardening, which are third-year projects, through the fourth year. Once the boy is started with the easier projects in the first year, he is encouraged and helped with them throughout the four years' course, and all through the four years the other members of his family are encouraged to

co-operate with him, in the interest of producing the best possible home garden. The training all through is a training for self-help.

The agricultural instructors are on duty throughout the summer, some of them riding weekly circuits for forty, sixty, and even ninety miles in going from farm to farm among their pupils. They do a vast amount of "county agent" or "farm bureau" work among the adult farmers along their routes and hold appointments as "collaborators" of the United States Department of Agriculture, have the franking privilege, and work in the closest co-operation with the Massachusetts Agricultural College extension service.

The efficiency of the instructors as a unified body is promoted by mid-winter and mid-summer conferences at which they all meet at the agricultural college. At these conferences representatives of the United States Department of Agriculture and the Bureau of Education are present, which tends to insure teamwork through the instructors for the benefit of practical farmers as well as the boys in the agricultural classes in every locality.

One striking feature of the results of the work is that during 1914 the earnings of 235 boys, in connection with good work at school, amounted to over \$42,000, all but about \$4,000 from farm work. Agriculture, in short, is the big interest of the boys who succeed in the vocational type of schooling.

HOUSEHOLD ARTS

A BAVARIAN SCHOOL OF HOUSEKEEPING¹

As the train pulls into the little station of Miesbach, Bavaria, one of the interesting sights that strikes a stranger is the large red brick building standing on a high slope some distance away, and surrounded by trees and hedges which give it the appearance of a stately baronial estate. It is that of the famous School of Housekeeping, which graduates yearly some fifty pupils or more. The inside of this substantial-looking house shows its proximity to Munich, for the simple ornamentation, the tasteful coloring, and the comfortable furniture bespeak its nearness to the art centre. The school is fitted up in the most approved and modern fashion as to heat, light, electricity, etc.

The large dining-room, with its soft tints of blue and white, its numerous small tables, covered with spotless linen and the prettiest of silver and glass, looks more like the dining-room of a well-kept hotel than of a school.

The kitchens are spacious, immaculate in their white tiling, and fitted up with every possible convenience. The preserve-rooms fairly glisten with jars of strawberries, pears, plums, grape-jam, marmalade, asparagus, beans, peas, tomatoes, sweet and sour pickles, etc., all grown and put up by the pupils of the school.

There is a practical and a theoretical course, both of which are obligatory. The practical course includes: (1) cooking, baking, and preserving; (2) washing and ironing; (3) housework, viz., bedmaking, sweeping, dusting, knowledge of the care of hardwood floors, and of blanket cleaning and summer storing; (4) flower, vegetable, and fruit growing; (5) poultry and bee-keeping; (6) sewing, dressmaking, mending, and repairing. The theoretical course comprises an advanced course in botany, chemistry, physics, political economy, and household-bookkeeping.

¹ By Mary Parkinson. *Nation*. 94:208-9. February 29, 1912.

The science of nourishment is also taught, as is a proper knowledge of the different cuts of meat, their average cost and weight, etc.; also "first aid to the injured" and how to prescribe for the simpler ailments in the ordinary household, and lastly the elementary methods of caring for the health and character of children.

The outdoor life presents equally wholesome and desirable surroundings. Here all kinds of vegetables, flowers, and fruits are grown, tended in the most scientific fashion by the pupils of the school. Lettuce and cauliflower, for instance, are grown under the large glass bells found so useful in the sewage market gardens about Paris, and the poultry, ducks, and geese are looked after with the utmost care and knowledge, the large result of which is a commendable supply of fresh eggs and marketable birds every week.

The girls take turns each week in attending to the various household duties; a certain number taking charge of the kitchen, planning all the meals, buying and paying for all the food, and preparing and cooking it for the whole school. Another set of pupils do all the sweeping and dusting, all the silver and brass polishing, take note of the condition of the floors, and see that fresh flowers are put in their accustomed places. Others, in turn, attend to the bees and poultry, and still others do the gardening. The instruction in sewing, mending, dressmaking, millinery, and embroidery is rich in results, and teaches method and thrift in buying clothes, and care in keeping them neat. Every detail of the daily housekeeping is thought out to a nicety, and as few maids are kept in the school, the pupils are made responsible for the proper and efficient care of the entire household. The indoor life prepares pretty solidly for the subsequent duties of housewife and mother. It is safe to say that when these girls have their own establishments to manage, there will be neither culpable negligence nor ignorance.

EDUCATING THE CONSUMER¹

Now, it has been taken for granted through the generations that, since we all do consume things from the moment we are born until we die, consumption must be instinctive, no more needing to be taught than breathing. We see dimly that modern housekeeping has let go of production and concentrated on consumption; but we are, most of us, a little loth to admit that an education in housekeeping must be almost entirely an education in consumption. This was not true in the past, it may not be true in the coming ages, but in the present and the immediate future it is not to be questioned; for, as Mrs. Ellen H. Richards said, home economics must stand for the ideal home life of to-day, "unhampered by the traditions of the past."

Time was when the woman who kept house was expected to be the high priestess of that dire goddess How-to-Save-Money, but her metamorphosis from producer to consumer has shifted her worship to the new deity How-to-Spend. From an all-round producer the American woman has become the greatest consumer in the world. Of the ten billion dollars spent annually in the United States for home maintenance, food, shelter, and clothing, fully ninety per cent is spent by women. Isn't the science of consumption, then, worthy of special emphasis in the training for home efficiency?

Not many schools of home economics have grasped the fact that they should be *per se* trainers of consumers. They still tend to overemphasize home production; but the best of them are very generally swinging toward the first and most important work of training the consumer—they are beginning to establish standards.

"I am conscious of a standard," writes a pupil of a correspondence school from southern Illinois. "I see it in the way I manage my household, in my expenditure, my work. I think a change in my standards is now going on under the influence of my household studies. The change will, I suspect, consist largely in a shifting of emphasis in delivering me from certain traditional ideas."

The standards of this lady were the inherited housekeeping

¹By Martha Bensley Bruère. Outlook. 102 :29-34. September 7, 1912.

standards, the standards which our ancestors established through the long ages when they were building up the home as a factory.

Take the matter of food. It is undoubtedly for the advantage of the community that every individual stomach should have enough, and not too much, inside of it. The old standard was to distend its walls by mere bulk; the new school-set standard is to furnish it some two thousand to three thousand food units daily. The schools have worked out this standard of consumption through the study of protein and starches and fats, of calories and muscle-builders and heat-producers, till they have found the amount and kind of fuel the human machine needs for the various kinds of work it must do. To build these standards is a question of laboratories and applied mathematics not within the command of any middle-class home. If all of us are to have the benefit of them, they must be brought to us by the universities and the public school.

I met a Pratt Institute graduate on the Chicago train and led her gently to tell me how much of her domestic science she found useful in her housekeeping.

"Well," she confessed, "when the baby is teething, and the cook has left, and there is company to dinner, I don't think much about calories or a balanced ration, but somehow I've got the theory so well digested that I put the right things together without thinking about it."

Her food standard has become a part of her unconscious mental furniture, like the gauge by which we measure the length of our steps and the focus of our eyes.

I looked over some papers on Housing written by pupils of the American School of Home Economics. Says one of the students who lives in the country: "In the matter of house sanitation the important point is to know exactly what you have to deal with. There is no use in taking country plumbing for granted. You have got to get away not only from the traditional ideas of the man who built the house, but from your own old ideas as well."

These old ideas from which she is being freed by new school-set standards taught that a country house did not need an indoor bath-room, that the parlor was a jewel-casket to be opened only on rare occasions, that the children should be "bunched" in one room, that running water on the second floor was a luxury, that sanitary garbage disposal was optional with the individual.

Under the influence of her new standards she has found out where every one of the pipes in her house is located, what they are for, and how they attend to their job. She has worked out for herself a system of out-of-house drainage, a new water system, and a method of scientific ventilation. As a consumer of housing she has put her training in practice.

Now, the basis of all these standards must be the ability to recognize quality when we see it. This is so important and so difficult that the Government tries to make it unnecessary. To establish standards—minimum standards, to be sure—has come to be the work of sanitary inspectors, tenement-house inspectors, clean milk commissioners, pure food and drug experts, departments of street-cleaning, and a hundred more. Theoretically, it would be well for the Government to establish standards for all things used by the consumers, and so save the schools from the onerous duty of inculcating them, and the pupils from the travail of assimilation. But how shall a Government that can reasonably say, "Potatoes below a certain grade shall not be used for human food," regulate the number of up-to-date potatoes a man shall eat? How shall a Government that can, and does, keep printed matter below a certain grade out of the mails say to the voracious consumer of storiettes, "Thus far and no farther?"

Besides, an efficient Government without efficient citizens is not a democracy. We don't want to revert to a benevolent despotism, or even to an apron-string bureaucracy. The setting and maintenance of standards is a two-handed business—the establishment of standards by the Government, and the testing and use of these standards by an enlightened citizenship. And in matters where the Government has not yet established standards of quality the initiative must come from the consumer.

Consider the consumption of textiles—a job we have been at ever since we progressed beyond the wearing of raw skins. But the quality of textiles is still one of the unguarded frontiers of knowledge. In fact, the general knowledge of quality in textiles is decreasing; for though the specialists have grown wiser, the consumers, who used to know a good deal about cloth they themselves spun and wove, have grown more ignorant. Have we not, all of us, seen our mothers place a wet finger under the tablecloths they were buying, to see if they were pure linen? That is a perfectly good test with hand-spun linen; but it is a dull manufacturer who can't circumvent a wet finger. We need both

the training of the schools and the Government guarantee to buy cloth wisely.

It is no longer enough that cloth should be all wool and a yard wide—that means little. Even pure wool, when it is short and stiff, or soft and weak, is a poor purchase; that there are qualities of cloth in which the warp and weft are so uneven in weight that the heavy threads pull the light ones, and the cloth wears itself out; that there are weaves in which certain threads are so exposed that they break and leave a rough surface. All tests of "pure wool" cloth!

But this is only a small part of the study of woolen fabrics, only a preliminary to establishing the standards of quality and price for the benefit of the consumer. Into these standards enter conditions of cloth production in the factory, wages paid operatives, taxes paid the Government, "Schedule K," freight rates, and the costs of selling the finished product. Nor is this training in textiles limited to general principles. It applies itself to such definite things as blue serge and black broadcloth, and other standard products. Students of the science of consumption have determined that, under existing conditions of wool production, price of labor and tariff, the lowest cost for blue serge fifty-four inches wide and of efficient quality is a dollar and a half a yard, and that the lowest cost of a similar quality of black broadcloth is nearly three dollars. Will not the trained consumer who has thoroughly assimilated these facts realize that when either blue serge or black broadcloth is offered for a less price it is not all wool, or is wool of poor quality, or damaged, or "mill ends," or remnants? Of course we recognize that both good and inferior cloths have their legitimate uses if the consumer is neither deceived as to their quality nor overcharged. There is no reason why the law should prohibit their manufacture as it may well prohibit the manufacture of adulterated foods and drugs. All that the consumer needs is to be protected by an honest label. How could the world get along without "shoddy," for instance, a cloth made from odds and ends of wool fiber, usually fiber that has been used before, when the present production of new wool is not nearly equal to the demand?

But the student has got to be taught that even these standards of quality are not absolute things. The perfect buttonhole may be produced at such a cost of time and labor that it is for the general advantage to use the commonplace hook and eye. It is not a question whether we can individually afford to pay in

money for hand-made lingerie, but whether the community can afford the expenditure of so much eyesight and time and thought to make what is perhaps a superior product, but for which there is an approximate substitute; for are not things expensive to the community even when we make them ourselves?

Besides knowing what is for the advantage of the community and being able to recognize quality when one sees it, it is the work of the consumer to see that what the community needs is produced. Can one eat eggs, however wholesome, in a land where no hens are? I listened to one domestic science teacher who seemed to set me right between the covers of "Our Mutual Friend," where Dickens tells how "Mrs. John Rokesmith, who had never been wont to do too much as Miss Bella Wilfer, was under the constant necessity of referring for advice and support to a sage volume entitled 'The Complete British Family Housewife.' But there was a coolness on the part of the British Housewife that Mrs. J. R. found highly exasperating. She would say 'take a salamander,' or casually issue the order 'throw in a handful of'—something entirely unattainable. In these, the Housewife's glaring moments of unreason, Bella would shut her up and knock her on the table, apostrophizing her with the compliment, 'Oh, you *are* a stupid old donkey! Where am I to get it, do you think?'

A good many instructors—far be it from me to call them what Bella did—entirely ignore the difficulties of getting the "salamander."

Inextricably mixed up with learning how to get produced the things one wants is learning how to secure them after they are produced. The consumer must be trained to remove the obstacles between himself and the thing he needs. These obstacles are usually matters of cost—cost and its contributing causes, transportation, the exploitation of public utilities, the smothering of useful patents, and the arbitrary limiting of useful manufacture. From all over the country come letters full of the same things that are in the contributors' columns of the papers and magazines. "Eggs cost sixty cents a dozen, so we use rice instead." "Electric current for heating is so expensive that we still burn coal." "I would like to send Harold to college, but it costs so much that I cannot afford to." "Do not use butter in making pastry, for, though the flavor is better, the cost is very much more."

The consumer and those who advise him take prices as final

things, as representing the true cost plus a fair profit, whereas in reality—

Now the trained consumer knows that there is no fuel like electricity, so clean, so reliable, so easily controlled; but the better trained she is, the more certainly she knows that she is as much cut off from using it as though it were ambergris. Why? Because it varies in price from ten to nineteen cents a kilowatt-hour. I have just called up the contract department of the Commonwealth Edison Company, of Chicago, and found that the net rate for family use is ten cents, exactly the same as in New York City. But the people of the region have taxed themselves to build a drainage canal, a property now belonging to the people, which has developed 125,000 horse-power, about 100,000 horse-power of which is available. This, in the form of electric current, at the very lowest estimate, is worth about \$2,000,000 a year. Some experts reckon it to be worth ten times that. A small thing, but their own, and what could it not do if turned into the kitchens of Chicago at cost? Does that ten cent a kilowatt-hour rate have to stand? Is it wise to teach the consumers that it is a Heaven-fixed obstacle to good housekeeping? They broke down the \$1 per 1,000 feet gas limit in New York City, the car-fare rate in Cleveland, and the freight-rate limits in Wisconsin!

I was talking with a woman from Sun Prairie, a small Wisconsin town in the midst of a dairy district.

"Oh, yes, I cook with electricity," she said. "It does cost a good deal now, because, you see, the plant is just new and we haven't paid for it yet."

"Paid for it?"

She looked at me for a moment in uncomprehending surprise, then smiled her amusement.

"Oh, it belongs to the town, you know. We pay a good price for the current now—almost as much as they do in the city; but as soon as we have paid for our plant we shall get it at cost, and then it'll be the cheapest thing we could use."

This, of course, is on the basis of a municipally owned plant—a small one, that is supposed to be more costly to run than a larger one.

The University of Illinois, in a pamphlet written by Mrs. E. Davenport, has worked out the cost of equipping a single country house—one that can be sufficiently lit by thirty tungsten burners—with an electric plant of its own. The cost of buying

and installing this plant is approximately \$600, the cost of maintenance from eight to ten dollars a year, and the cost of the electricity so produced is five cents a kilowatt-hour. Now of course Mrs. Davenport's plan involves electricity at a low voltage to be used for lighting only; but the country consumer who has refused to consider the kerosene lamp as final may well refuse to let the coal range obstruct her efficiency. Aren't the problems of electric light and electric heat Siamese twins?

Certainly it is part of the consumer's job to perform an economic steeple-chase over the fences and the ditches and hedges that are between her and the things that it is for the advantage of the community that she should have and it should be part of her education to practice her in economic hurdle-jumping.

I have been talking with Miss Snow, head of Household Arts work in the Chicago public schools.

"If this instruction in housekeeping," said she, "were nothing but teaching the children to cook and clean and wash and do all the other things that are done *in* the home, I shouldn't be very much interested in it. As I see it, Domestic Science is a training in the valuation of life relations. It concerns itself with government and politics and business and health and capital and labor and the social setting of them all. It is really training the consumer to *live*."

And to live is to consume!

In the public schools, where the courses are comparatively elementary, the relations between life and the specific studies are not difficult to establish.

Housekeeping, even the larger housekeeping which is not production, is but a small part of this science of consumption which can operate quite as directly upon a memorial statute at Washington as upon a can of beans.

Consumption is our one universal function, and through it we have power and happiness and progress, or retrogression and spiritual and bodily death. Some of us already know what we want to consume and how to get it, but it takes an educated social vision to see the needs of the race and how to satisfy them. Is there any bigger work for the universities, the colleges, and the public schools than to train consumers to this end?

BUSINESS OF HOME-MAKING¹

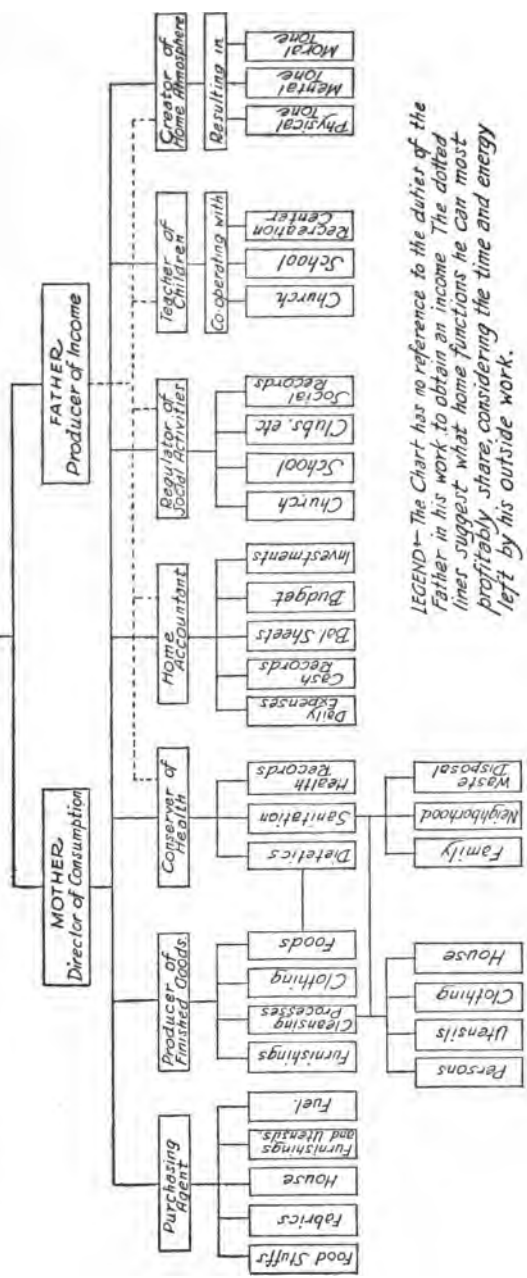
When vocational training began to be emphasized in the schools it was inevitable that the business or industry of home-making should be examined for teaching content. It occupies the time and energy of the majority of women, its success or failure has a vital connection with the welfare of us all, and there is increasing discontent with inefficiency in home-making. No longer can we think of homes as independent units, where the family may do as it chooses, but rather the home must demonstrate that the sum total of all the family activities, the final resultant of the family life, is an acceptable share in the larger community life.

Modern industrialism has taken most of the gainful productive processes from the family group, forcing the man partner in the family out of the home to gain an income, depriving the woman partner of her former share in these processes, and leaving her a work in the home which has to do with the consumption of goods, a work formerly shared by the man.

It is important to note how this separation of the two partners has affected the home life. The loss to both man and woman of the companionship and interested assistance of the other during the long hours of productive labor is not made up by a companionship during those periods given over mostly to recuperation. If division of production and consumption is to remain and both the partners of the home cannot equally participate as producers of income and directors of consumption, it is essential to the continued satisfaction in the partnership, to retain this mutuality of functioning as much as the free time of the father partner will permit. Those are the most satisfactory occupations which give him a reasonable freedom for the cultivation of the home life. He must first satisfy the demands of the work producing the income, but where the family is deprived of the father's personal assistance in the home life, it cannot have as great a home spirit and happiness as would result from the combined personality of both parents; in addition there is the reaction affecting the spirit and efficiency of the mother.

¹ By Mrs. Harvey M. Hickok, Stanley College, Minneapolis. National Society for the Promotion of Industrial Education. Proceedings 9th Annual Meeting, 1916.

THE FAMILY — DUTIES OF —



LEGEND—The Chart has no reference to the duties of the Father in his work to obtain an income. The dotted lines suggest what home functions he can most profitably share, considering the time and energy left by his outside work.

American conditions are demanding expert service as relates to the consumption of economic goods. American people have become expert as producers of incomes, but our increasing population and the lessening of natural resources even before the enormous waste of the great European war, have focussed serious attention on the use we make of the goods produced, we are beginning to make some progress in the economy of spending. The average American family must succeed in demonstrating its family right to purchase goods as it pleases, to direct its own consumption, or it may wake up to find its members involved in a species of slavery, where the same competent brains of the successful employer, now deciding what rewards are due the workers in production, will also decide how and for what these workers may spend their earnings. Since the father must go outside the family to produce the goods to consume, or their equivalent called income, the mother, left in the home, must adjust the family consumption to modern conditions, if the family is to have a safe solvent basis on which to build its family life.

And the woman must be trained for her business. It is no more possible for a woman to manage a household instinctively than for a man to succeed in a business of which he knows nothing. Is there a more important subject before the educational world in America today than the type of education necessary to produce the well trained home manager or expert on the consumption of goods? Where this preparation is not utilized in the position of home manager of the smaller family unit, an extension or specialization of some part of her training will be found a most acceptable community service and subject her the least to open competition with men now engaged in the usual productive activities.

Despite an almost constant opposition of the woman manager in the home to the efforts of the educator to gather teachable material, the secrets of the household have been brought bit by bit into the schools, the material itself has become more and more comprehensive, and many of the cherished traditions formerly held sacred in maternal conclave have been reduced to scientific formulae or openly disproved. There still remain outposts of investigation, of course. Among these is the formulation of the facts regarding home Finance, actual investigation of which is openly resented by the majority of home managers.

But education, by the schools and the public press, is establishing definite ideas as to what is efficient family living and increasing emphasis is being laid on the economic functions of the mother partner as well as of the father partner, in order to insure family solvency and escape that bankruptcy, termed divorce.

Can these functions of the woman partner, the comptroller of consumption, be so formulated as to be a basis of a definite teaching program to fit women for the business of home-making either in the typical family of father, mother and children, or in some form of an "associated group?" One vital condition is that the formulation must also appeal to the experienced home-maker, the woman already on the job; that is, it must include possibilities for continuation classes to be offered to adults.

The following analysis of the work of the woman in the home suggests such a formulation. The chart accompanying this article represents this analysis in a graphic form. No attempt is made to analyze the duties of the father in order to secure an income. The dotted lines on the chart indicate what home duties he can best share considering the time and energy left by his outside work.

Preliminary also to the analysis it is important to note what is meant by "family solvency" and "family resources."

"Family solvency is that condition arising from a wise adjustment of all the family resources where the family is able to meet all its immediate obligations, and in addition is conserving enough capital to warrant a reasonable assurance that future obligations will be met, and is also able to effect such transition into the succeeding generation of families as will insure a continuity of the best in race and family heritage." "It must also be understood that family resources include not only the income contributed by any member of the family from outside sources, but also all services and differences in value which any member may add to raw material before it is acceptable for family consumption, and also all those services and added values to community life contributed by any member and thus discharging family obligations to the community group. Those families, none of whose members assist in the upbuilding of the community life, beyond the securing of their own safety and comfort, are not meeting all their 'immediate obligations,' and are allowing other families to pay their bills to that extent."

There are seven main functions to be executed by the woman

partner in the home. First she must be a good "purchasing agent." She must understand and remember shifting market conditions, the nutritive values and costs of pure food stuffs, the wearing, sanitary, and aesthetic values and costs of fabrics, furniture, utensils, and housing. The family needs are so diversified that expert knowledge of many different goods, milk and shoes, furniture and meat, underwear and fuel, is demanded of the woman home purchasing agent. She must know exactly how much she can spend and for what physical demands of the family can be afforded, a distributed system, where each kind of purchase has its own allotment of the total income, will be found to yield the most data for satisfactory comparisons. A tentative budget may be drawn up, combining the past demands of that particular family and the best practice found workable in other similar families. After a conscientious adherence to this budget for a year, or through the seasonal changes, a more permanent budget may be worked for that family. Definite training in purchasing is an essential for the woman director of consumption. Where she fails as purchasing agent, extraordinary efficiency must be displayed by the father of the family or insolvency of the family will result. Where the man partner attempts to supply this deficiency, either by trying to earn more than he normally can produce or by being the purchasing agent himself, it may result in using just that amount of energy needed to turn the scale in his business affairs.

Second; the mother partner must be a producer of "Finished Goods" from raw materials. The preparation of foods from food stuffs, of clothing and furnishings from fabrics, the numberless services connected with an acceptable arrangement of these finished products for consumption, and the continuous cleansing processes demanded in the modern home, constitute most of the physical labor to be accomplished by the home partner.

A knowledge of the fundamental principles of nutrition in relation to food combinations, is more important than an exhaustive knowledge of the old time empirical formulae known as recipes. It is not likely that the production of cooked foods will disappear from the household. The physical difficulty of producing heated foods in a satisfactory condition requires the close proximity of the consumer. No such necessity compels the maker of finished clothing or furnishings to be near the

consumer. Therefore these productive processes have largely left the home. But the cleansing processes we shall have with us always, and where their physical labor can be reduced by household machinery, the woman manager will have more time and energy for other important functions.

All the productive processes in the home are facilitated by the application of the principles of scientific management. There are many home-makers who are "forehanded" in their work. All the dozen or so principles of efficiency taught by Mr. Emerson and others have been practiced for years by the efficient manager in the home, although she may not have called them "standardizing," "routing plans," "time schedules," "dispatching," "efficiency rewards," etc.

When one adds that it is the business of the "producer of finished goods" in the home to employ, train, superintend, and suitably reward all domestic labor, an additional emphasis is laid on this part of the home partner's work. Whatever she knows of psychology, and pedagogy, sociology and ethnology, in addition to productive processes, will find an extended field for application.

The solution of the domestic labor problem is a woman's job, and if it is ever to be accomplished in America, the custom and usages, as to duties and privileges of the household worker must be standardized. This means a co-operation and consensus of opinion of the women employing labor in their homes. Standardization is as important in home work as in any outside industry, and I see no reason why it cannot be accomplished by women. So far women managers tend to make their own laws and customs without regard to establishing standards. Until competent and intelligent women can feel some security and dignity in domestic service, they cannot be expected to enter it, even if the net income and comfort exceeds their present rewards in shop or factory.

Third, it is the duty of the mother in the home to conserve the family health. The beginnings of prophylaxis or prevention of disease, includes a conscientious adherence to prescribed food schedules. The close relation between dietetics and food preparation is indicated on the chart, also the connection between sanitation and all cleansing processes. Home sanitation will determine the limits of family neglect, but within these limits the family is responsible for its own health. Family safety from

communicable disease demands active interest in all questions of neighborhood sanitation, especially the disposal of waste. It is important that the father in the family lend his interest and assistance in these outside community problems.

An important part of the work of the "Home Conservor of Health" is the recording of the regular examinations made by physician and dentist. Although the school is beginning to supply this service for the children, it is just as necessary to take physical inventories of the adult members of the family.

The work of the woman as "Home Accountant" is perhaps the least understood and practiced in America of any of these functions. A family cannot be in a solvent condition with no definite records as to its consumption of economic goods. A system of keeping daily purchase records can be made simple enough to fit any condition of time or skill. But whatever system is used it is essential to truthfully record the purchases made. The price of a matinee ticket or the extravagance of a useless article of personal adornment must not appear to the eyes of the trusting man partner as an extra bill for meat or sugar. Neither can the man retain the confidence of the woman partner if he makes false expense returns against the family income. Such transactions are as dishonest under the family roof as in any more closely watched business house.

It is necessary for the complete safety of the family that monthly summaries and yearly inventories, balance sheets and budgets be worked out and agreed upon by both partners. All questions of the standards of the family life must be adjusted to the earning capacity of both family partners, if these material considerations are not to overshadow continually other phases of the family life. Also both partners should fully understand and agree upon the conditions governing all savings, insurance, properties, or other investments affecting family welfare.

There is no question relating to home-making which is attracting more attention in America than that of home finance. What other nations have done, our suddenly realized need for our own savings, and the efforts made by Banks and other financial institutions, have induced a nation-wide campaign for the cultivation of thrift. The year 1916 is the 100th anniversary of the first Savings Bank in the United States. There is an opportunity for our banks to interest themselves more definitely in home finance as only they have the machinery to cultivate certain capacities of the "Home Accountant."

The fifth function indicated is that of "Regulator of Social Activities." One of the needs in American home life today is a centralized authority which has the power to regulate the family behavior as regards social affairs. Although a large share of the details of all plans for recreation must fall on the mother partner, it is practically impossible for her to succeed without the sympathetic support and assistance of the father, familiar with the world of men.

The economic waste of over-amusement appears, not only in the excessive proportion of the income claimed by amusements, but also in the waste of time and strength badly needed for important things. A definite amusement program for the family would correlate the necessity for recreation, the conservation of time and health, and the proper budget allotment. Simple pleasures, open air excursions, informational trips to many places of interest can be had for the cost of carfare. A simple recreation schedule, alive and interesting, may be productive of invaluable family habits, which so largely determine that complex thing we call social standing.

One of the most satisfying functions of the mother manager is the teaching of her children. The mother teacher has a wealth of the most interesting material and the advantage of the first six years in the child's life. It is important that definite working plans be made for the study and play periods. Better direction of the child's home activities would make more frequent the really natural attainments now so often called exceptional and precocious. Both parents are responsible for a complete union of the child's activities in the home with those of the church, school or recreation center.

Emphasis should be laid on training the ideality of childhood. The child who has had an opportunity to live in an imaginative world at the time when he was acquiring many of the facts of a material existence and has learned to idealize common things, has an ability to soften the sterner realities of life. Thought habits about fairies and other good invisible forces may also lead to a basic comprehension for religious faith. Also whatever parents desire their children to preserve of family traditions of race and heritage must be taught as a supplementary education to that given in church, school, or civic center.

Finally, the woman partner is almost wholly responsible for creating the home atmosphere, that intangible resultant of the

physical, mental, and moral states, that pulling together of all the family effort to reach the proper home spirit. This crowning success of the woman's effort must have the foundation of successful performance, either personally or directed, of all the other functions.

The thing which lives the longest in the memories of the succeeding generation is the home atmosphere, a subtle pervading influence, giving confidence and sympathy for living and work, reacting on family ambition and loyalty, and is the outward expression of family happiness.

VOCATIONAL GUIDANCE

THE FIRST JOB¹

Nearly all of us have learned to think of vocational guidance dynamically—that is, in terms of growing children emerging into a changing social and economic environment.

The many surveys that have been made, and those now in course, need to be converted into machinery for giving *continuous* information about children and about industry, and about the changes taking place. We need to know week by week (and we shall know when we realize the need) the number of children—say, up to eighteen years—who go to work, and the nature of the work; and the number of juveniles discharged from work, and for what reasons. And we need to know what becomes of those who remain at work.

The most favorable point for the establishment of such machinery seems to be in connection with the compulsory school attendance laws, or with the juvenile labor laws. In Ohio, Wisconsin, Rhode Island, Connecticut, Indiana, Pennsylvania and some other states it is possible to make the issuance of work-permits a means for the automatic and continuous registration of most significant facts, not only in the regulation of juvenile labor, but in the guidance of educational policies. Pennsylvania last year gave her administrative officers a splendid opportunity; we are waiting for some power to give them the vision to use it.

Juvenile placement service should be more directly joined to the schools, on the principle that a child should be under official surveillance until he is safely on his feet; and to the agencies that are cognizant of changing economic conditions, on the principle that the public must guard its children against exploitation.

The more fundamental needs are those that the school has to meet. First of all, it is necessary to reorganize our curricula and our administration into a more flexible system, to the end that the teachers may be able to utilize the conduct and the perform-

¹ By Benjamin C. Gruenberg. *Survey*. 37:370. December 30, 1916.

ance of the pupil day by day, whether in the class-room, laboratory, shop, studio, gymnasium or extra-curricular activities, as indications of the pupil's further needs in the way of opportunity for instruction, or training or self-expression. More and more schools are introducing special activities calculated to develop vocational ideals and vocational purposes. Normal schools and teachers' colleges must prepare teachers with the information and the viewpoint and the ideals required for the successful modification of instruction.

Vocational guidance means directed educational evolution of living organisms; it therefore requires the services of men and women who have the experimental intellect, the technique, social vision and sympathies.

VOCATIONAL GUIDANCE¹

The present time seems to be opportune for taking account of the significance of the vocational guidance movement. If intelligently evaluated and directed, it has great possibilities for the improvement of our systems of public education. On the other hand, it may fail in its beneficent purpose altogether if these possibilities are overestimated, if irrational methods are employed, or if impossible results are promised.

Like most new movements, its chief dangers lie in the extravagant claims of its too-zealous promoters on the one hand, and the unreasoning skepticism of the ultra-conservatives in education on the other. Somewhere between these two extremes will be found a reasonable vocational guidance program which is receiving the attention and gaining the respect of a large number of progressive educators.

For example, there are those who appear to believe that it is easily possible to develop a system of character analysis by means of which marked vocational aptitudes can be discovered or equally marked incapacities can be detected and pointed out. Such advocates of vocational guidance deprecate any attempt to counsel youth until a complete and adequate method has been worked out by trained specialists, and they point out the grave dangers which attend an "unscientific" plan of guidance. They

¹ By Frank M. Leavitt. *School Review* 23:482-3. September, 1915.

generally demand an equally thorough study of vocations and feel that the information thus gained should be systematized and prepared for use before any vocational guidance should be attempted.

On the other hand there are those who, seeing the great difficulty of carrying out the plans of these extremists, and being quite willing to delay action and to justify the schools as they are, deny both the possibility and the necessity of vocational guidance as a school function.

Between these extremes will be found many progressive school men who are proceeding on the assumption that the public-school system should articulate with life at many more points than it now does; points well distributed between the professions at one extreme and the humblest vocations at the other. While they appreciate the contributions which scientific study can and will make, ultimately, to the movement, these progressive educators see great need of immediate action, and they are proceeding accordingly.

Details cannot be discussed here, but, speaking generally, these educators are working on the theory that vocational guidance is not a new function of education, but rather an old function which needs liberal extension. This extension, furthermore, lies within two well-defined fields, the first being curriculum enlargement or adjustment, and the second, educational supervision of those who have left the regular schools.

The first leads naturally to the establishment of new vocational courses, the revision and adaptation of old ones, and the necessary "educational" guidance which will enable the pupil to choose intelligently from the rich educational offerings.

The second leads, quite as naturally, to the establishment or improvement of evening schools, compulsory day continuation schools, and the inauguration of what the English term "registration"; that is, the school employment office or "placement bureau." All this may be designated as employment supervision.

We are of the opinion that curriculum improvement and employment supervision, while they cannot solve all problems, will go far to meet the present demand for vocational guidance in the schools. Indeed, as was affirmed some years ago, "vocational guidance means guidance for education, not guidance for jobs," though "jobs" may be the ultimate goal. Therefore school officials, even though they cannot command a vocational survey by

trained investigators, should take an active part in the vocational guidance movement, for, surely, all who are genuinely interested in the full unfolding of the American system of popular education are hoping that the movement will prove to be, not a mere eddy in the stream, but a real quickening and broadening of the whole educational current.

VOCATIONAL INFORMATION FOR PUPILS IN A SMALL CITY

The course in vocational information in the Middletown, Connecticut, High School is divided as follows: the first is a careful consideration of the importance of vocational information, the characteristics of a good vocation, and how to study vocations; the second and main part is a detailed treatment of some eighty or ninety professions, trades, and life-occupations grouped under agriculture, commercial occupations, railroading, civil service, manufacturing, machine and related trades, the engineering professions, the building trades, the learned professions and allied occupations, and miscellaneous and new openings; and the third and concluding part of the course is a practical, thoroughgoing discussion of choosing one's life-work, securing a position, and efficient work and its reward.

Unfortunately, although there are many excellent reference books, bulletins, etc., there seems to be as yet no one suitable book which the pupils can use as a basal text. Here may I be allowed to make a confession? Owing to the difficulties encountered in assigning the lessons, for two years we suspended our work in vocational information, hoping to find a thoroughly satisfactory textbook, or perhaps to wait for the publication of such a one, but, while we know of a manuscript that we think would just fill the bill, we are through with waiting and are making the best use we can of the texts already at hand.

We have found the following books fairly satisfactory as companion texts when supplemented by considerable collateral reading: *Careers for the Coming Men*, by Whitelaw Reid and others; *What Shall Our Boys Do for a Living?* by Charles F. Wingate;

¹ By W. A. Wheatley, Superintendent of Schools, Middletown, Connecticut. *School Review*. 23:175-80. March, 1915.

and *Starting in Life*, by Nathaniel C. Fowler, Jr. Among the best reference works for the pupils the following are worthy of mention: the vocational booklets published by the Vocation Bureau of Boston and by the Students' Aid Committee of the High School Teachers' Association of New York City; many free bulletins issued by the federal and various state governments and by the International Correspondence Schools; catalogues, bulletins, and pamphlets of colleges and of trade and professional schools; many trade journals; and a series of ten volumes on *Vocations* edited by William DeWitt Hyde.

In studying each of the vocations we touch upon its healthfulness, remuneration, value to society, and social standing, as well as upon the natural qualifications, general education, and special preparation necessary for success. Naturally, we investigate at first hand as many as possible of the vocations found in our city and vicinity. Each pupil is encouraged to bring from home first-hand and, as far as practicable, "inside" facts concerning his father's occupation. Local professional men, engineers, business men, manufacturers, mechanics, and agriculturists are invited to present informally and quite personally the salient features of their various vocations. And here, since these experts, not being teachers, would otherwise be likely to miss the mark completely and present phases of their work of little interest or value to the pupils, each speaker has explained to him carefully beforehand the purpose of the course in vocations and specifically just what is desired in his particular address.

In order to make this presentation of our course in vocational information just as concrete and understandable as possible, I shall now outline for you two typical lesson plans in two rather separate departments of the vocational field; one is on the poultryman and the other on the mechanical engineer. Also, let me remind you that our work so far has been adapted to the boys only; a little later I shall speak of our recent beginnings for the girls. The lesson plans now follow:

A Lesson Plan on the Poultryman

NOTE.—This lesson may be completed in from one to three days, the treatment depending upon the particular locality and the needs and interests of the class.

The setting of the lesson.—Before taking up the poultryman, the class has had a good introduction to general farming and has stressed the importance of agriculture, the nature of this sort of work, present social ad-

vantages, remuneration in money and otherwise, qualifications and education desirable, and starting and succeeding in agriculture. The pupils have also completed, in specializing farming, the stockraiser and the dairyman and, as soon as they have finished this lesson outlined on the poultryman, they will study the market gardener, the fruit-grower, and, more briefly, other miscellaneous agricultural workers, such as the nurseryman, the seedsmen, the beekeeper, the veterinary, etc.

Lesson assignments preparatory to the recitation.—All members of the class have been assigned a lesson in their textbook on vocations, or, possibly, in several such books. The class, as individuals or in small groups, has been directed to several farmers' bulletins, issued by the United States and various state governments, to the agricultural yearbooks of the last three or four years, catalogues of agricultural colleges, and if possible to at least one book and one magazine of the following: *Down-to-Date Poultry Knowledge*, by F. W. DeLancey; *Farm Poultry*, by G. C. Watson; *Principles and Practice of Poultry Culture*, by J. H. Robinson; and the monthly periodicals, the *Poultry Fancier* and the *Egg Reporter*.

Two or three members of the class, especially interested in this vocation, have been directed, as special assignments, to interview any local poultry-raisers or dealers in eggs and dressed poultry in order to report to the class such items of interest as the following: how many hens these men raise or sell in a year; how many dollars worth of business they transact; what breeds they find most satisfactory; whether eggs or dressed poultry pay better; whether most of the poultry products consumed in town are raised near by or at a distance; whether the poultry business locally is overdone or offers an attractive opening for young men; how much capital would be necessary to make a fair start, etc.

From their books, bulletins, and periodicals the pupils get vocational facts of a more or less general character, while from the raisers and dealers interviewed they are able to get first-hand, concrete, localized information.

The class exercise or recitation.—The pupils will learn that the eggs produced and the poultry found on the farms by the United States census enumerators in 1910 were worth as much as the wheat crop, or about \$620,000,000; that the great egg-producing section of our country is the Mississippi Valley and that this product is not raised by expert poultrymen at all but by general farmers as an incidental or side production; that the scientific poultryman makes his profits by keeping better breeds of hens, whether for egg-laying or meat purposes, in more efficient handling, or care, of fowls to secure greater returns, and in wiser methods of marketing his products. Of course, they also learn something of the nature of poultry-raising and what qualities and education are desired of the prospective poultryman, as well as how one might enter this work and how succeed in it. In this connection, they will investigate and discuss some of the many advantages to be gained from a course in an agricultural college.

The class will discuss such topics as these: the advantages and disadvantages of making poultry-raising a distinct business rather than a branch of general farming; a comparison of eggs and beef in nutritive value and digestibility; the likelihood of poultry products serving as an increasingly important substitute for beef, pork, and mutton; the advisability of selling eggs by the pound rather than by the dozen; how to

produce eggs of the best quality and then how to get the best prices for them; how to test and grade eggs; how to discover the particular hens in one's flock that are the best layers; some of the best breeds for egg-producing, for meat, for general purposes; the necessary equipment for poultry-raising, and its cost; the incubator; proper care of laying hens and of poultry for meat purposes; and which is better adapted to a particular locality—poultry-raising, fruit culture, dairying, or general farming.

A Lesson Plan on the Mechanical Engineer

The place and setting of the lesson.—The treatment of the mechanical engineer in the textbook will be found in the chapter devoted to the engineering professions. Before this particular lesson is taken up the class has already studied a general introduction to the whole field of engineering, touching upon the history, the general division into civil and military engineering, and the inestimable services this group of men has rendered and continues to render mankind in relation to inventions, manufacturing, transportation, communication, conservation, sanitation, etc., instancing such triumphs as the telegraph, the modern printing press, an automobile factory, the Simplon Tunnel, the Brooklyn Bridge, the Panama Canal, reclamation of western land, etc.

Next there was considered in brief outline a general scheme of the work performed by each of the following engineers: the civil engineer, the municipal and sanitary engineer, the mechanical engineer, the electrical engineer, the mining engineer, the metallurgical engineer, the industrial chemist, and the architectural engineer. After completing this general survey of the engineering field, the class treated in detailed fashion the callings of the civil engineer and of the municipal and sanitary engineer. The pupils are now ready to undertake this lesson on the mechanical engineer, which we are about to outline, and they will make a similar detailed study of the remaining five engineers, whose general scheme of work we have already surveyed, and thus they will complete the chapter on the engineering professions.

Lesson assignments preparatory to the recitation.—So much for the setting of the lesson on the mechanical engineer. In preparation for the class exercise or recitation the whole class is asked to review the general scheme of the work of the mechanical engineer and to study the new section in their textbook or books dealing with the nature of this special branch of engineering; its advantages and disadvantages as a life-calling; the remuneration at the start and in a man's prime; the opportunities for regular employment and advancement; and the natural qualifications, the general education, and the special training required.

The entire class, as individuals or in small groups, has been assigned special topics in such free bulletins as *Graduates and Their Occupations*, published by the Massachusetts Institute of Technology; *Suggestions concerning the Choice of a Course in Engineering*, issued by the Carnegie Institute of Technology; *Announcement of the Co-operative Courses of the University of Cincinnati*; *Mechanical Engineering*, by the International Correspondence Schools; in such catalogues as those of the Massachusetts Institute of Technology, Columbia School of Mines, Cornell University, etc.; in such books as Goddard's *Eminent Engineers*, and McCullough's *Engineering as a Vocation*;

and, if possible, in at least two of the periodicals, *Popular Mechanics*, *Scientific American*, *Engineering Magazine*, and *Engineering News*.

One or two of the pupils especially interested in this vocation should interview some near-by mechanical engineer in order to report to the class some such items of interest as the following: what work this engineer is engaged in at present; what he considers the greatest piece of mechanical engineering in the neighborhood; how he ranks his branch of engineering with the others; what natural or native qualifications he considers of great value to the prospective engineer; what subjects in high school he considers of most importance for his calling; would he advise the regular technological course or the co-operative school and shop course; does he consider mechanical engineering an especially attractive profession, etc.

While studying this branch of engineering, or some other, it would be well to secure a practical, successful engineer to talk to the class informally about any phases of his profession or experiences he has had that would prove of especial interest and value to the study.

The class exercise or recitation.—During the recitation the class might discuss such topics as: which of the three engineers so far studied in detail renders society the greatest service; which one is most necessary to your particular community; which one's work seems perhaps the most attractive; what natural qualifications, what general education, and what special training are absolutely necessary for success in this profession; what subjects should constitute the best high-school course preparatory to this profession; what subjects the best technological schools demand for entrance; what are the advantages and the disadvantages of preparing for this profession in a co-operative school and shop course; what kind of work during summer vacations would serve best in trying out a boy's aptitude for mechanical engineering; what is the difference between an expert machinist and a mechanical engineer; what is a contracting mechanical engineer, etc.

We have just introduced a similar course for girls the second half of this year and are using as texts Lasalle and Wiley's *Vocations for Girls*, Weaver's *Vocations for Girls*, and Perkins' *Vocations for the Trained Woman*, directly supplemented by the dozen or more pamphlets issued by the Appointment Bureau of the Women's Educational and Industrial Union of Boston, Massachusetts.

When we consider that such a course in vocational information is practicable everywhere, that it is inexpensive, and that besides being intrinsically interesting to the pupils it actually gives them greater respect for all kinds of honorable work, helps them sooner or later to choose more wisely their life-work, convinces them of the absolute necessity for a thorough preparation before entering any vocation and holds to the end of the high-school course many who otherwise would drop out early in the race, should we then apologize when we urge upon educators and the tax-paying public that this branch of vital human knowl-

edge be given a place in all our high schools, especially when it will require only as much time as commercial arithmetic or geography, or one-half as much as algebra, or one-sixth as much as German or French, or finally one-eighth as much as Latin?

Let us not forget that there are already fifty American cities and towns giving their youth some form of systematic vocational guidance. These have done the hard pioneer work; why can we not increase the number to five hundred within a year or two and then make it general within five years? We can easily effect this, if every earnest educator will do his part in his own school system.

VOCATIONAL GUIDANCE IN BOSTON¹

There is much in our present industrial, social, and democratic environment which emphasizes this function of guidance in the schools. In our present social scheme, among other factors, it is the danger of the omission of the principle which has given the principle no little importance, for in our ills today we are impressed with the necessity of prevention of ailment rather than the curative treatment of it. Specifically illustrated, we no longer wait until a boy has been committed to a penal institution before he is taught a trade, but we teach him a trade, among other reasons, that he may avoid such commitment.

Again, there is the influence of the application of scientific principles to human factors as well as to material processes. The choosing of a vocation by the "trial and error" method seems to be as unprofitable here as elsewhere. There is too much staked on one chance, and there are so few chances to try again. The chances are always against the boy, and success means luck rather than merit.

Personally, I have often felt the need of emphasizing the proper mental attitude on the part of the youth toward his prospective job. Grit and courage, I believe, have more to do with successful adjustment to the job than special aptitude. It must be remembered that special aptitude toward any work is frequently accompanied by painfully evident special inaptitude. The atti-

¹ By Frank V. Thompson, Assistant Superintendent of Schools, Boston, Massachusetts. Vocational Guidance Association. Annual meeting, 1914. In *School Review*. 23:105-12. February, 1915.

tude toward the job is always as important as aptitude for the job. Moral attitude has seemed to count more than fortunate mental and physical gifts. What vocational counseling would have advised the youthful Demosthenes to study oratory?

Vocations are less plastic than the individuals who pursue them. Individually in the job was the mark of the handicraft stage; automatic machinery, measured time reactions, and standard products make the job comparatively inflexible. The process of adaptation is in the worker, rather than in the work. Competent vocational guidance must induct young workers into the real world as it is, with all its uncompromising facts. We must not allow our boys and girls to believe that there is any royal road to vocational success, any more than to learning. Some of our present school influences are at wide variance with the main tendencies in our industrial society. The unrestricted elective system in high schools emphasizes aptitude and individuality out of proportion to our industrial structure, wherein co-operation, social subordination, and standardized tasks are basic principles.

The few scientific tests for vocational aptitudes that we now possess give us more of concern than of promise. The vocational counselor wishes to know what a boy can do, more than what he cannot do. Our psychological tests are aptly called eliminative tests. They are more negative than positive; they eliminate but do not evaluate. The practical methods to be at once adopted by vocational counselors are those which are obvious rather than obscure. The school records of pupils, if properly kept and reasonably comprehensive, furnish enough presumptive evidence upon which effective guidance can be tentatively based. Joint conference with the youth and his parents will give the counselor enough additional information upon which to give competent advice, for we must remember that guidance is a different function from placement.

In Boston concrete and definite plans for organized work in vocational guidance are gradually taking shape. Faster progress is prevented chiefly by a lack of funds. Most of our work at present is on a voluntary basis and, while well intentioned and often effective, still lacks the force and achievement which is the result of expert and compensated service. Our present organization for carrying on vocational guidance is as follows: Each elementary school has two teachers assigned to act as official vocational counselors; one of the teachers deals with the pupils

leaving to go to work, and the other advises pupils and parents regarding profitable choice of high-school courses. Each high school has one teacher and sometimes more assigned as counselors, but here counseling is limited chiefly to pupils leaving school to go to work.

Several special schools, such as the Trade School for Girls and the Boston Industrial School for Boys, have provision in their organization for the appointment of special teachers known as vocational assistants, who have definite assignment of duties covering guidance, placement, and follow-up work. In the Trade Schools for Girls vocational assistants have been at work for several years past and what they have been able to achieve furnishes encouragement as to what may be expected as the result of the extension of the kind of service they are giving. Assignment of actual instruction is limited to one period and is for the sole purpose of bringing the vocational assistant and pupil together for more intimate acquaintance. The chief duties of the vocational assistant may be summarized as follows: Visiting the homes of girls who are absent; visiting shops to learn of places; answering calls for employment and placing girls in shops; following up records of girls in shops, assisting in adjustments, and sometimes replacing girls. In addition, these vocational assistants are present at the school one evening a week for conference with working girls who are unable to appear during school hours, and lastly they keep all essential records of the girls, containing information relating to the school, the home, and the shop. Very recently the High School of Commerce has had incorporated into its organization a department head whose chief function is guidance, placement, and follow-up work. A special instructor is assigned to similar duties in the High School of Practical Arts. A general director for vocational guidance has only this year been appointed, but he is primarily an officer in the Continuation School organization, and, consequently, can devote the lesser part of his time to the specific problem of vocational guidance.

Some description of the relation of vocational guidance to continuation schools may profitably be given at this point. When boys and girls under sixteen years of age leave school to go to work, they must secure the necessary working certificate. The process of securing the certificate involves an interview with the director of vocational guidance. From the school comes a some-

what detailed statement covering not only what is conventionally known as the school record,¹ but, in addition, a detailed account

249 BOSTON PUBLIC CONTINUATION SCHOOLS

(1914) SCHOOLS Personal Record of.....
First name Initial Last name

School.....Home address.....District....Suite or floor.....

Sex.....Color.....Date of birth.....Birthplace.....Years in U.S..

Father's name.....Occupation.....Business address.....

Mother's name.....Occupation.....Business address.....

If either parent is not living so indicate by placing * before the parent's name

Date of this record.....Date of leaving school.....

Grade on leaving.....Teacher's name.....

PHYSICAL CHARACTERISTICS:

Weight.....Height.....Neatness.....

Special physical defects.....

Remarks

SCHOOL RECORD:

Conduct.....Times present.....Times absent.....

Cause of absence.....Times tardy.....

ArithmeticEnglishGeographyReading.....

HistoryGrammarMusicSpelling.....

Drawing.....Manual trainingSewingCooking.....

PenmanshipSciencePhysical training.....Physiology.....

HIGH SCHOOL SUBJECTS. Course.....

English.....History.....Foreign language.....Mathematics.....

Science.....Clerical Arts.....Domestic Arts.....

Special talents

GENERAL CHARACTERISTICS:

Reliable.....Industrious.....Obedient.....Cheerful.....

Courteous.....Has pupil initiative?.....Remarks

Has pupil indicated any interest which should assist in the selection of an occupation?

If so, what interest?.....

.....What occupation?

Do you as { Teacher } think this interest should be encouraged?
{ Vocational Counselor }

Parents' reference for child's work?.....

Previous work record.....

Is the aid of the Placement Bureau desired?.....

Remarks

This Record is to be forwarded to the Employment Certificate Office, 218 Tremont Street, Boston, Mass.

¹ See accompanying card.

of personal qualities, evident aptitudes or shortcomings, and home conditions. Personal conference enlightened by school information enables the director to give supplementary advice regarding the prospective job and to assign with some basis of presumptive evidence the proper course to pursue in the compulsory continuation school. Guidance and follow-up work are essential features of the Continuation School course, and the teachers of the school are given definite time in their progress to attend to these functions.

The Placement Bureau of Boston comes indirectly into the problem of vocational guidance. This institution is not an official organization of the public schools. It is conducted chiefly by private enterprise although receiving a small subvention in the way of rental from public school funds. The School Committee of Boston has encouraged co-operation with this institution on the part of the schools. Copies of the vocational information cards, mentioned above, are given to the Placement Bureau, which is often instrumental in finding suitable places for boys and girls leaving school. The Placement Bureau has rendered effective service in replacing boys and girls who have left positions for one reason or another. The Boston Chamber of Commerce has aided the Placement Bureau freely by urging employers to resort to the institution in looking for juvenile employees.

During the past few years the attempt has been made to acquaint our voluntary workers in vocational guidance with some of the most important facts and conditions of industry and business. Our vocational counselors everywhere, except in certain special schools mentioned above, serve without additional compensation and also with no exemption from their regular duties. Consequently, no large demands upon their time can reasonably be expected. Business men, store superintendents, and trade experts have, from time to time, made addresses to gatherings of vocational counselors assembled from all over the city at central points. More benefit has resulted from contact with special private institutions like the Vocation Bureau and the Girls' Trade Education League. The bulletins and monographs of those two organizations have been of value in furnishing the specific information about industry and business together with wages and working conditions prevailing therein, which the counselors need to know. We have been fortunate in Boston in

enjoying close association with the Vocational Bureau which has been a central point of organization and information upon vocational guidance for the whole country. We owe today our vision of the possibilities and appreciation of the need of vocational guidance to the Vocation Bureau.

During the current year we are trying a different method from the lecture system in acquainting our counselors with the problems and duties of guidance. We are carrying on a series of locality conferences under the charge of the director at which discussions take place concerning the way to solve problems as they originate in the schools. The attempt is thus being made to organize the experience of the members of local groups who usually are confronted with conditions rendered more or less uniform by reason of similar prevailing social and economic circumstances. As stated before, the present problems of vocational guidance are more obvious than obscure, but organizing the obvious is not an involuntary, automatic process, but requires specific and careful attention and needs completion before more developed and complex procedure may be undertaken.

The functions of vocational guidance should be more extensive than usually conceived at the present time; in fact, vocational guidance, in its limited sense, cannot be fully effective unless supplemented by personal, moral, and social guidance. Unless the scope of guidance is broadened we may be in danger of having its function looked upon as a sort of sublimated fortune-telling or palm-reading. We feel the need in the schools, as never before, of knowing more of the home environment and limiting circumstances of the boys and girls in our schools. But the schools at present lack organization and the means of assuming effectively larger burdens. Quite recently one large high school in Boston has accepted the assistance of the social workers of several settlement houses in investigating cases of school delinquency and irregularities. These school visitors have been asked to go into the home to confer with parents about failure in school work, about irregular attendance, and about marked infractions of school discipline. The results have proven of great service to the teachers of the school and to the parents of the children. The teachers, more often than not, have seen that they have misunderstood the causes of failure to respond to accepted classroom standards, that what was supposed to be a moral lack was in reality something very different and

quite condonable when the real reasons had been secured. The parents, as well, have been led to see that the school is something more than an unsympathetic institution making demands for conformity with regulations more legal than human.

The vocational counselor, or perhaps we should say the school counselor, may properly conceive her duties as embracing quite prominently the functions indicated immediately preceding. She should know the child in the school, in the home, and in the workshop, and should be a source of guidance to the teacher in the classroom, to the parents in the home, and to the child in his several relations in the home, the school, and the workshop.

It is quite natural that it should be assumed that there is a place in many schools, both elementary and secondary, in our large cities for one or more trained teachers possessing both sympathy and capacity for the problems of the counselor. The principle that vocational schools need this special service is already admitted in Boston and elsewhere. It will be illogical to deny that general schools need similar special service, for the motive today of our secondary schools is largely vocational. A large number of our boys and girls are unable to find places in our special vocational schools and resort to the general schools where they pursue special courses which promise to offer some of the advantages of the special school. A current study into the state of commercial education in our Boston high schools reveals the fact that from 50 to 90 per cent of our pupils are enrolled in commercial courses. This means that there are in this single field thousands of boys and girls in our own school system who need the special service of guidance, placement, and follow-up work. Our boys and girls are receiving this attention in part and as much as is reasonably possible under the limitations of the time and energy of the regular teachers, but the shortcomings of our present achievements simply emphasize the need of additional and more expert assistance if the sound, sensible, and long-cherished aim of our schools is to be better realized in our day and generation.

An able and influential monthly magazine contains in the current issue a bitter and brilliant indictment of our American school system, comparing it disadvantageously to the systems of Sweden and Norway, with their agricultural and technical folk schools. "We are content," our critic says, "to hang the alphabet and multiplication table around the child's neck and then

send the poor thing out to educate itself."

The awakening of the people and the teachers of this country to the need of vocational education, vocational guidance, varied and specific educational opportunities of a great variety constitutes the best answer to the above taunt. We have not as a nation failed to hold a noble aim for education, but many will agree that we need to proceed energetically toward the adoption and extension of more effective methods of attaining our aim.

THE VOCATIONAL COUNSELOR¹

There needs to be a man who stands like the signalman in the tower by the side of the railroad track watching for the incoming trains and setting the switch to turn each train to a clear track. The engineer on the moving engine may know much about his own train, but he cannot know which tracks are clear and which are blocked. The towerman knows not only the needs of the train, but sees the condition of the road ahead. So the vocational counsellor, with a broad outlook upon industrial conditions and a personal acquaintance with the needs and qualifications of the individual, though he cannot determine the life course of the youth, may help him find a clear track upon which his life trip is likely to be happy.

Let me emphasize what I believe to be most important. This task of vocational suggestion is so great, and may be of so much value, that it should be undertaken by a specially qualified person who may be able to devote his whole time and interests to the work. In small communities it may be possible for the superintendent of schools or some teacher to do some of the work which might be expected of a vocational director, but usually those people have enough with their present duties. A vocational bureau, either under private management or as a branch of the public school work might well be established in every city. Such bureaus are in operation in Boston, New York, Cincinnati and in other American cities, some of them under the direction of the school department; others conducted by the Young Men's Christian Association; others under wholly private management.

¹ From "Vocational Direction, or the Boy and His Job." By E. W. Lord. *Annals of the American Academy*. 35:sup. 73-85. March, 1910.

In our schools, there should be systematic and complete records of the personal characteristics and vocational bent of every pupil. Such a record which may be passed from teacher to teacher as the pupil advances in his course to be available when he is leaving school to go to work, might be of very great assistance to the conscientious teacher or a professional vocational director.

The vocational bureau should not be considered as an employment bureau, although it may sometimes serve that purpose; fully as often, however, its function is to prevent the applicant from going immediately to work by pointing out to him the possibilities of greater profit to himself and of greater usefulness to society which may come from entering some more advanced line of work for which he needs further preparation. It should be remembered that a vocation is not simply a job, that it means much more than that it affords an opportunity to make a living. The great mass of our people succeed in one way or another in making a living, even tho they do work for which they are ill fitted, and in which their enthusiasm and interests are not enlisted. It may sometimes be necessary for a boy to take the first job that comes to hand, even though it be wholly distasteful to him, but in that case he ought to be encouraged in preparing himself for something which will be more in harmony with his abilities and purpose. The idea of thoughtful, personal choice, and of earnest, unchanging purpose should be cultivated in every young person. The boy who has wisely made up his mind regarding the career which he should follow, as he can do after having taken expert counsel and sympathetic guidance, is likely to find an opportunity to enter his chosen vocation and to remain in it successfully; while his companion, who is merely waiting for something to turn up, and is following a purposeless round of uncongenial labor, is pretty certain never to find the chance which he vainly hopes will come to him.

I do not present the suggestion of vocational direction with the idea that it will prove a complete solution of the labor problem. I recognize many difficulties in the way. It is impossible for us to discern particular talent in case of many young people, and it may be impossible for us to find the opportunity for all to develop talents which they may show. He who undertakes the responsible position of adviser for youth must remember that he is working with human beings and cannot shunt

them upon this or that track with as little concern as the switchman turns the freight train. The responsibility, even of advising, is great and must not be lightly undertaken; yet I believe that we are right in undertaking it if by means of so advising and counseling the young we may be able to save some lives from wreck, and help many to better and more useful careers.

THE VOCATIONAL SURVEY¹

The need of information concerning the vocations, particularly the occupations in the trades and industries, in order to plan systems of vocational training for the schools, has led to a number of surveys. The first of these was the study made by the Massachusetts Commission on Industrial Education in 1906, which was followed by similar investigations by state boards and commissions, notably that of the Wisconsin Commission on Industrial Education, and that of the Indiana Commission on Industrial and Agricultural Education. The purpose of these investigations was largely to find the need for vocational education in these lines and to consider the broad administrative policies upon which through legislation the plan adopted should be based.

Within the last two years large cities having the resources to meet the cost of thorough studies have carried on surveys under the direction of persons of experience, to gain the facts which would help them to get the kind of industrial or commercial or household-arts education, particularly the former, best adapted to their conditions and needs. Among these have been the studies made by the Richmond Survey, the Cleveland Survey, and the Minneapolis Survey. The first and last of these were conducted by the National Society for the Promotion of Industrial Education as one of its means of serving the cause in a constructive way. The Society is now cooperating with the Indiana State Board of Education, and various local school boards in Indiana cities and counties, in the making of a survey for vocational education in various types of communities in that State; while the United States Bureau of Education is investigating the

¹ From introduction by C. A. Prosser in H. Bradley Smith's "Establishing Industrial Schools." Houghton Mifflin Co., 1916.

situation with regard to vocational education in connection with an educational survey it is conducting in the city of San Francisco.

These surveys are predicated on the idea that they are not only a good business proposition, but that the facts they gather and the expert opinion they offer are necessary to any intelligent dealing with the many difficult problems to be met in establishing vocational education of any kind in the community.

No competent American business man would think of establishing a manufacturing concern in a new place without making a survey—a careful study of all the important features of the location of the proposed enterprise. He would want to know, for example, the location of the site with reference to a source for raw material, competent labor, and desirable markets. He would look into the physical conditions of the site, its slope, drainage, and composition. The switching facilities for moving fuel, supplies, and finished product would be carefully investigated. Perhaps most important of all, his decision as to locating his business would depend largely upon the desirability of the community as a place to live and rear his family.

So in the same way a survey for vocational education is a wise business proposition. The community is soon to be called upon to invest money in site, plant, equipment, salaries, and supplies for the purpose of changing raw material in the form of untrained youths into the finished product of young men and young women equipped with the knowledge and skill to become successful wage-earners in their chosen callings. In order that neither the money of the city nor the time of its young people may be wasted, the vital facts about its vocations and its vocational needs should be gathered and interpreted by competent people before the school is begun. If there is any field of education or of human service where the old adage, "Look before you leap," applies with more force than in the establishing of vocational schools, the writer does not know what it is.

Every community, before entering upon a program of vocational education, should make a preliminary study of the conditions to which its plan must be adapted. It may be possible for communities to borrow or copy their school organization and their courses of study for general education from other places, although this usually results disastrously. One of the most pitiable spectacles in education to-day is the rural community

which has borrowed every feature of its work from that of a nearby city. Its manual training has no relation to country life. Its courses of study give no help to the worker in agriculture and lead away from rather than to the farm. All its work is aimed, not to prepare country boys and girls for rural life, but to prepare an occasional and lonely graduate to meet the entrance requirements of the state university.

In vocational education a community cannot transport bodily any scheme from another place, however well it may seem to meet the needs of the latter. Industries differ in kind from one community to another. When of the same kind they differ in grade and therefore in their demands upon workers. They differ in such things as the entrance wage they offer, the health risk to be met, and the opportunities for better wage and promotion presented. They differ in the attitude of employers and their willingness to cooperate with the school by employing its graduates on favorable terms or in employing boys on a part-school, part-shop plan. Likewise communities differ in the attitude of organized labor toward the school and toward recognition of the training given by the school as a part of the required apprentice training. Communities vary from State to State in the age and the conditions under which a pupil may leave school to go to work. Even if communities could safely copy their scheme of vocational education bodily after that of another city, they would not get very far. Thus far industrial education for the youth has been established for a very few trades, such as machine shop, carpentry, cabinet-making, printing, electrical work, automobile repair and construction, bricklaying, plumbing, and gas-engine work, in the case of boys; and dress-making, millinery, cooking, machine operating, and junior nursing, in the case of girls. These fourteen lines are, after all, only "a drop in the bucket" when one considers that the last United States Census listed three hundred and eighty-six recognized occupations in the industrial and mechanical industries alone.

Not all occupations are worth training for, it is true. Nor can the school train successfully for all occupations, some of which must be learned "under the conditions of the trade." But it seems clear that thus far we have only crossed the threshold of our task of providing training for the vocations in industrial and mechanical lines. Vocations are to-day highly specialized, and any training for them, to be successful, must be correspond-

ingly highly specialized. The search for common elements in all the vocations, which could be given to the youth as a preparation for each and all of them, has been from the outset as certain of failure under modern conditions as the search of Ponce De Leon for the magical fountain of youth.

Without precedent to guide them, upon which they may completely rely in meeting the difficult and complicated and highly specialized problem of providing vocational education for its citizenship, communities must base their programs on a local study of conditions and the suggestions and recommendations of those with most experience in dealing with vocational education.

Not all communities can or will provide surveys carried on by outside parties. In such cases the study if made must be conducted by the superintendent of schools or some other local person. Even if communities desired a survey by so-called "experts," there are few persons at the present time with experience to equip them for the task. Communities are not accustomed to pay for such investigations out of their school budget. It may be that in some States such an expenditure from the school fund is not authorized by law. Too often local self-sufficiency opposes outside interference. In many quarters of every community there is an impatience if not contempt for expert service. While the money which a community would spend for a competent survey before undertaking any plan of vocational education would probably be the wisest investment it could make, communities do not always have, or at least they do not think they have, the money for such an innovation.

For all these reasons, and for others that need not be given here, we may expect to see the survey, conducted by persons of experience brought in from the outside, confined, in general, to larger cities where philanthropy or an awakened public sentiment has made the establishment of vocational education on an extensive scale possible and imminent, and where the call for an expert study is insistent.

Most of the surveys for vocational education, particularly outside the largest cities of the country, will be conducted by local agencies of which in many if not in most instances the superintendent of schools will be the leader.





